RAINFINE®
Irrigation Solution.

Rainfine (Dalian) Irrigation Co., Ltd.

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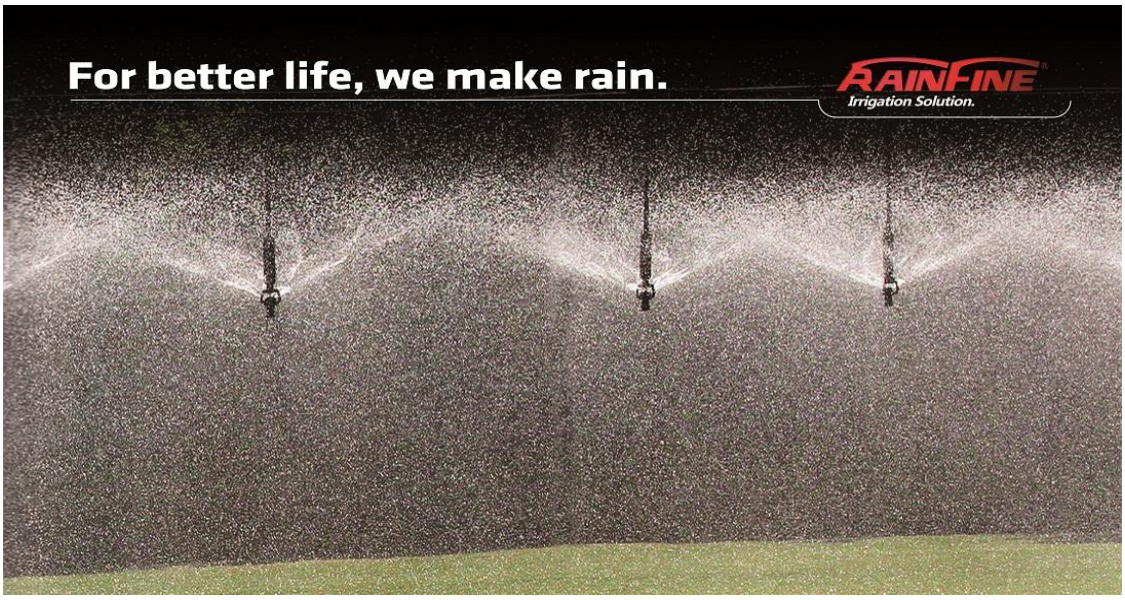
ABOUT RAINFINE



PIVOT+PIPE+PUMP
Professional irrigation design service

GLOBAL MANUFACTURER OF IRRIGATION EQUIPMENT SINCE 2002

Rainfine has been designing, manufacturing and installing center pivot and lateral move systems since 2002, providing international clients with customized watering solutions. We have access to the most advanced technology in addition to experience in this field.

We know that every farm is different and every crop requires specific care. At Rainfine, we help you plan out every aspect of your irrigation solutions, including long-term cost benefits. After surveying the land, we customize an irrigation layout design that maximizes your valves, we manufacture center pivot systems that can withstand wind, rain and snow, lasting you years. Whatever your budget, climate or size of your field, Rainfine will find an energy and water-conserving irrigation solution that's tight for you.

OUR MISSION:

HELP INVESTORS IN AGRICULTURAL BUSINESS:
1. MAKE THE MOST OF MONEY
2. INCREASE CROP YIELDS
3. SAVE WATER RESOURCES

OUR WORK:

Provide consultation services in every aspect of your irrigation solutions, including:

- **land surveying and planning**
- **Pipeline network calculation**
- **Pump station calculation and design**
- **Business proposals and budget plans**
- **Pumps, valves and irrigation machines supply**
- **Installation and commissioning**

Whatever your budget, climate or size of your field, Rainfine will find an energy and water-conserving irrigation solution that's tight for you.

Goal of Rainfine is to provide high quality irrigation machines and services at affordable prices. In recent years as our business has developed, we've expanded our market to more countries, tackling a range of tough projects with sloping terrain, particularly dry climates and large fields.

Our irrigation manufacturing meets the following standards:

International: ISO15873 ISO12374 ISOTR15155
French: NFEN909
British: BSEN12325-2
American for galvanizing: A123
ISO9001-2008 QC standard

Improve our irrigation equipment to meet the specific needs of our customers is always on our schedule. With several patented inventions, we will keep on forward and maintain enthusiasm.

Our newest developments:

No-maintenance collector rings using 16 wire radar technology
Drivable pivot with automatic wheel turning system
No-maintenance plastic tires that never have a flat
Radio and mobile phone automatic control system
Farm management system that monitors and reports climate and soil moisture

Where we export our products:

Argentina, Australia, Brazil, Chile, Ghana, Germany, Ethiopia, France, New Zealand, Libya, Mongolia, Iraq, Paraguay, Saudi Arabia, Sudan, United States and Zambia.

We also supply our products to CIS countries such as Kazakhstan, Russia, and Ukraine.

In recent years as our business has developed, we've expanded our market to more countries, tackling a range of tough projects with sloping terrain, particularly dry climates and large fields.

THE LONGEST FIXED PIVOT: 650M (12 SPANS, 2011, KAZAKHSTAN)

THE LONGEST TOWABLE PIVOT: 500M (9 SPANS, 2011, KAZAKHSTAN)

THE LONGEST LATERAL MOVE: 797M (DITCH FEED, DOUBLE WINGS, 7SPANS PLUS OVERHANGS EACH, 2013, RUSSIA)

PRODUCTS

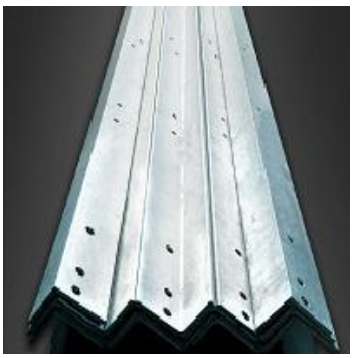
CENTER PIVOT

FIXED CENTER PIVOT

In a fixed center pivot, one end of the machine is fixed while the other moves spans clockwise by motor driven tires. At the fixed point end, river or bore well water may be used as the water source transporting water through the main pipes to the sprinklers. The advantage of the center pivot is that it takes less labor and water to irrigate 13-130ha from one water feeding point. A specially designed steel structure can be customized for different lengths of center pivots. While one span with one overhang (80m) is the simplest center pivot system you can choose, our heavy duty design allows for up to 11 spans (650m) with angles and bolt pivot anchors strong enough to withstand high winds.

1. PIVOT POINT

Our fixed hot dip galvanized steel central tower has a main panel with an automatic shutdown and reverse system, pressure gauge, pivot point light and electric collector ring

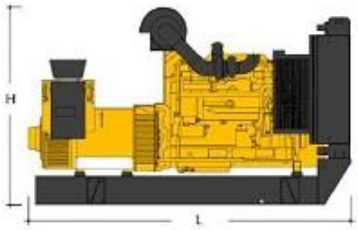


Pivot point:
Leg angle size: L4″x4″
Elbow: diameter 8” thickness 1/8”
It is a special design to form a solid anchor for even longest system.

Control panel:
Main breaker.
Control transformer.
Start stop switch.
Main contactor.
Monitoring indicators.
Forward / reverse contactors rated 600v at 30 amps.
Fuses – 30 amps.
Lightning arrestor

2. DIESEL GENERATOR

We can offer various diesel generators from 6 to 20kw for pivots. We can supply small diesel generators that most big brands do not with Chinese best engine. We are able to supply any spare parts for these generators as well.

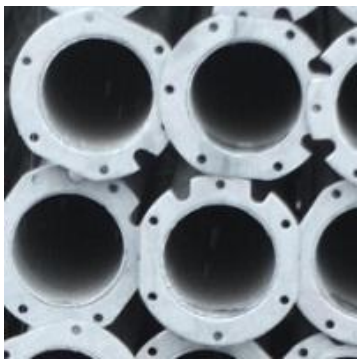


Model No.: PF15GF
Prime Power (kw/k VA): 15/19
Standby Power(kw/k VA): 16.5/20.9
Engine Model: 4L22BD-4
Alternator Model: FD1E
Dimensions(mm): 1360*560*885 Weight(kg): 420

3. SPANS

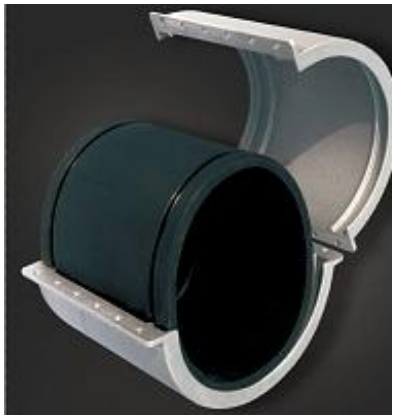
Metallic zinc-coated Spans rubber-boot united between themselves, mounted on support of intermediate towers-each with two wheels, axles drive unit from electric geared motor to Wheels gearboxes; the electronic block of the system of the equalization and checking.

Truss design is the most important part on pivot parts on pivot irrigation system. The structural mechanics are precisely calculated by computer and tested in tough road. It can stand 20 years long lasting work without any bending or breakings.



Two options:
1. Galvanized pipe diameter 8”, 6 5/8”, 5 9/16”
2. Galvanized pipe with poly lining diameter 8”, 6 5/8”, 5 9/16” for special water

Galvanizing Kettle:
Inside Dimension: 14,000 long x 1,200 wide x 2,000 mm deep
By W. Pilling of Riepe, Germany, the world's leading kettle manufacturer.
50mm wall thickness, European Special Grade Plate
Quality standards: BS-729, ASTM-A12

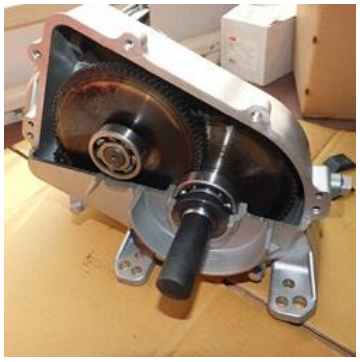


This flexible joint supports all the strength of the pivot and maximum pivot's flexibility in rolling land. We design it for the control panel switch off the system and stop the machine when the aluminum coupler break due to spans not properly aligned.

Being cut as the picture shows, the steel rod and the headed part are exactly the same molecular. This truss rod can stand 60,000psi yield strength. We use 22mm diameter rods instead of 19mm to make it stronger than other manufacturers.

Two options:
1.Traditional UMC coupler (left): no more used
2.UMC C-X Coupler (right)
Units come pre-assembled
Universal design
Simple one wrench installation
UV stabilized Urethane puck

Motor	Drive speed (RPM/50Hz)	Power	Ratio	Wheel speed (RPM)	Tire size	Distance of wheel per rev	Last tower speed at 100% timer set up
A	25 RPM	0.75HP	40:1	0.50	11.2x24	3.23m	97 m/h
					11.2x28	4.42m	133m/h
					14.9x24	3.60m	108m/h
					16.9x24	3.81m	114m/h
B	33 RPM	1HP	40:1	0.66	11.2x24	3.23m	128m/h
					11.2x28	4.42m	175m/h
					14.9x24	3.60m	142m/h
					16.9x24	3.81m	150m/h
C	49RPM	1HP	29:1	0.98	11.2x24	3.23m	190m/h
					14.9x24	3.60m	212m/h
					16.9x24	3.81m	224m/h



Motor	Drive speed (RPM/60Hz)	Power	Ratio	Wheel speed (RPM)	Tire size	Distance of wheel per rev	Last tower speed at 100% timer set up
A	30 RPM	0.75HP	40:1	0.60	11.2x24	3.23m	116.4 m/h
					11.2x28	4.42m	159.6m/h
					14.9x24	3.60m	129.6m/h
					16.9x24	3.81m	137.4m/h
B	43 RPM	1HP	40:1	0.86	11.2x24	3.23m	166.8m/h
					11.2x28	4.42m	228.6m/h
					14.9x24	3.60m	186.0m/h
					16.9x24	3.81m	196.8m/h
C	59RPM	1HP	29:1	1.18	11.2x24	3.23m	229.2m/h
					14.9x24	3.60m	255.0m/h
					16.9x24	3.81m	270.0m/h

Two options:

1. Standard(left):

Material: Grey Iron HT250

Shaft Material: high-strength forged steel

2. Heavy duty(right):

Material: Ductile Iron HT300

Shaft Material: Steel 45

Two options:

1. Rubber tire:

11.2*38: Good clearance and flotation

14.9*24: Tubeless tire 4ply, for heavier and longer spans

16.9*24: For longer spans more flotation

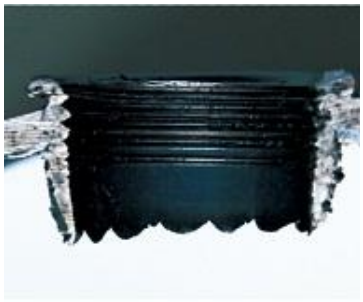
2. Plastic tire:

Rim: 10*38 with plastic pads (16 pcs×4kgs each)

Similar size to 14.9*24 rubber tire

Never flat / UV protection

Pad replacement / Non maintenance



Gooseneck:

M X M, M X F, M X B

We use automatically controlled welding Robot to do the welding for pipes to ensure the quality. We introduce Form drill technology from Germany and use it in our pipe drill processing system. This technology can help the gooseneck to have a maximum connection to the pipe outlet holes and reduce the gooseneck damages during the sprinklers vibrating.

Tower box:

Contactor rated 600V at 16 amp min.

Alignment switches rated 277V at 15 amp tested to 10,000,000 cycles.

On-Off switch rated 600V at 10 amps.

- 4# 14 gauge, 6# 18 gauge
- 4# 12 gauge, 6# 14 gauge
- 4# 10 gauge, 6# 14gauge
- Inner PVC 30 mil thick
- 8 mil aluminum shield
- Outer polyethylene 15 mil
- Sunlight resistant
- Moisture and dirt protection

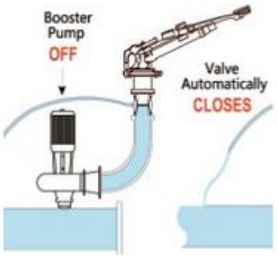
4. OVERHANG

The high yield strength overhang cable is used in longer overhang. This design can help farmers to increase yield with less investment.

Pipe size:
Φ141mm*3mm
Φ102mm*3mm
Overhang length:
6.70/13.41/20.12/26.82m

5. END GUN



Corner control system for end gun

The end gun can switch on/off by solenoid valve when pivot moves to four corners. This valve is controlled by the switches in the pivot center.

6. SPRINKLER

The vast differences in crops, soils, farming practices and climatic conditions worldwide, coupled with regional differences in the availability of water and energy resources requires a diverse array of center pivot sprinkler performance. The sprinklers we choose for you are advanced designed to simplify the variety of sprinkler choices into one basic group of center pivot products.

D3000

A fixed-spray sprinkler which produces a variety of patterns dependent upon the specific spray plate;

Flip-over dual spray can allow easy conversion of the spray pattern;

Choose spray plate options to germinate, irrigate, chemigate;

Optional hose drag adapter for Low Energy Precision Application – LEPA;

Part circle available.

O3000

Outstanding uniformity and optimal droplets at low operating pressures;

Bracket unassembled, eliminate debris hang-up and water-pattern misting common to conventional sprinklers;

Long wear-life, reliable operation and durability;

Excellent water application, 10-20 PSI operating pressure;

Wind resistant, maximum water and energy conservation.

R3000

Greater throw radius. The wide water pattern from rotating streams equates to lower average application rates, longer soak time and reduces runoff;

High uniformity. Increase overlap from adjacent sprinklers improves uniformity;

Reduce wind drift and evaporative loss;

Part circle available.

S3000

Gentle rain at low pressure;

Utilize a free-spinning acting to produce a gentle, rain-like water pattern;

Designed for more sensitive crops and soils;

Superior uniformity with better overlap and lower application rates;

Crop-guarded body for low energy, down in the crop application;

Part circle available.

LDN

Minimized losses to wind drift, evaporation and runoff;

Multiple deflector pad design;

Rugged design for traveling through tall crops;

Low pressure – 6 to 15 psi;

Chemigation Pads produce an upward spray under the crop canopy;

Bubbler Pad applies water in a gentle, aerated pattern ideal for direct-to-furrow irrigation;

Wobs

Unique off-center rotary action, outstanding uniformity;

Gentle, rain-like application;

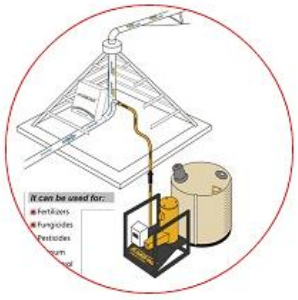
Excellent distance of throw;

Low pressure operation from 10 to 20 psi, can mean big energy savings over the course of a year.

Xi-Wob
Large area of coverage
Ultra low pressure
Easy clean, easy change nozzle
Droplet size needed for type of soil
Uniformity affects
Application intensity
Excellent distance of throw

Super Spray
Wide variety of color-coded deflector pads to customize distribution pattern;
Full 360o spray pattern;
Low-pressure operation: 6-25 psi;
Chemigation pads and hose barb adapter available.

7. CHEMICAL INJECTOR



The capacity up 85 to 500 LPH The maximum pressure up to 12 bar Measuring accuracy reaches to +/- 2% Within the scope of 10% – 100% flow rate Temperatures of liquid between -10oc~40oC Max.Suct: 2 m Motor: Standard 220V/380V, 50HZ

Flow rate calculate example

10 liters / hectare × 50hectares = 500 liters total

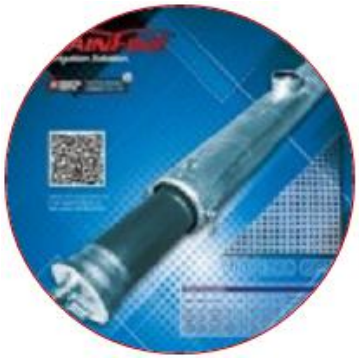
$$\frac{500 \text{ liters}}{24 \text{ hrs (time for one Pivot / Lateral move)}} = 20.83 \text{ LPH}$$

20.83 LPH × 0.264172052 = 5.5 GPH total

Tank (L)	Size	Agitator motor(KW)
400 L	Φ750×H1000	0.25
500 L	Φ860×H970	0.37
700L	Φ970×H1130	0.55
1000 L	Φ1070×H1300	0.55
1700 L	Φ1273×H1400	0.75
2000 L	Φ1369×H1450	1.1
3000 L	Φ1560×H1600	2.2

Technical data								
Model	Flow(L/h)	Pressure (Mpa)	Pump Speed(SPM)	Stroke Motor(mm)	Diagram Effective Diameter (mm)	Worm Gear Speed Ratio	Electric Motor Chosen	Diameter of inlet & Outlet Pump Pipes(mm)
JXMA-A 85/1.0	85	0.7	72	6	70	20:1	3-50HZ 220/380 VIP55/F	DN15 DN25
JXMA-A 120/0.7	120		72	8				
JXMA-A 170/0.7	170		144	6		10:1		
JXMA-A 240/0.7	240		144	8				
JXMA-A 315/0.5	315	0.5	144	8	80			
JXMA-A 400/0.5	400		144	10				
JXMA-A 500/0.5	500		180			8:1(m2.5,24:3)		

8. FILTER



This is an optional part when water is full of dirt. Normally each pivot needs one filter. The picture on the left below is a cluster system with 3 filters for 3 pivots nearby. The left second picture is the filter system being used together with segmented filter for drip irrigation.

Standard Equipment

- Barrels – Galv. or Enamel
- Ring Band Lock
- Replaceable Gaskets
- Can Be Welded Into Line
- 0-125 Working Pressure
- Stainless Steel Screens

24 Guage Stainless Steel Screen

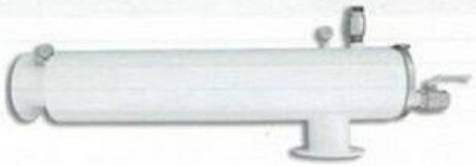
With Perforated Stainless Screen

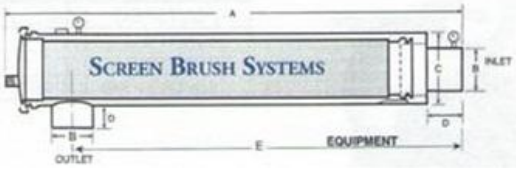
Description
3/64" - .045" Protects pivots and other systems
3/32" - .094" Protects pivots and other systems

24 Guage Perforated Sizes Available

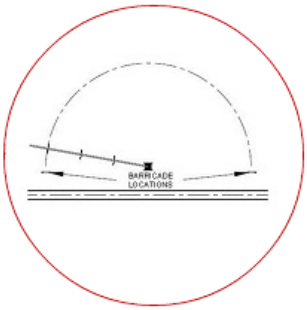
Call for pricing on these perf sizes.

Description
1/64" - .020" Fine system protection
1/32" - .031" Protects pivots and other systems
1/8" - .125" Coarse system protection
1/4" - .250" Coarse system protection





9. AUTO REVERSE



Due to the objective factors such as the terrain, obstacles, house and so on, the pivot cannot work a full circle (360 degrees). This system can control the pivot to stop/reverse automatically without manual control.

When its touch arm hits the barricade installed on the last tower, the pivot can stop and reverse automatically;
This system include control box, sensor arm, traverse arm, cable and springs;
Safety and crash prevention.

10. SHIPMENT

Each span parts are packed into one wooden box with clear packing list. This makes it easier for installation.
All wooden boxes are made of export material.
500m fixed pivot(9 spans) can be loaded into 1 x 40’ HC container.

11. INSTALLATION

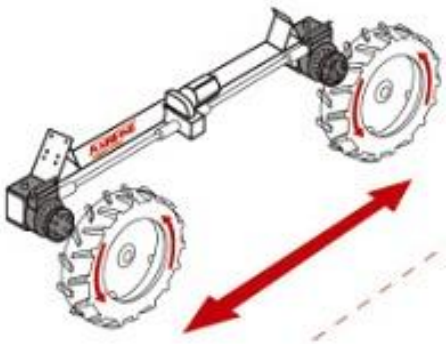
We will dispatch our engineers to organize the installation work but the owner will organize labors. Normally one 7 spans pivot needs 8 labors working 1 week for installation.

12. SPARE PARTS & GURANTEE

We will ship 2% spare parts together with the equipments in containers. The items of the spare parts will be listed on the contract. Our local representatives or dealers will help farmers to replace the damaged parts when necessary.

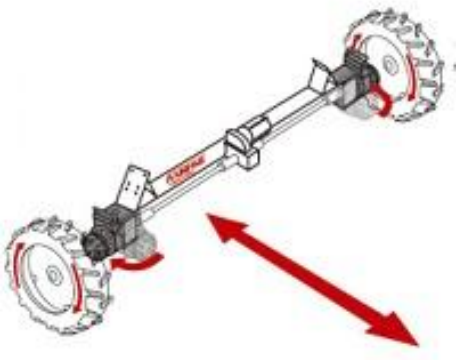
Guarantee:
1 year concerning electric equipment
10 years/10 000 working hours for gearboxes and gear motors whichever expires earlier
20 years concerning the galvanized equipment against corrosion
3 years for tires and rims

TOWABLE CENTER PIVOT



Tire direction while pivot working.

Turn the tire direction by hand.



Tire direction while pivot is ready to be towed.

Lock the tire position while towing.

PIVOT POINT

Three or four wheels are assembled on the center part of the pivot, which makes it possible to be moved from one place to another by pulling the pivot point with tractors. This system is called towable center pivot. One machine can be used to irrigate two or three pieces of lands, which is more economical. Towable center pivot is available for safe towing maximum 500m.

THE LEFT PARTS ARE THE SAME WITH FIXED CENTER PIVOT, PLEASE GO BACK FOR MORE DETAILED INFORMATION.

LATERAL MOVE SYSTEM

DITCH FEED

With lateral move irrigation systems that use ditch feeds as a water source, there are two ways to build the ditch – with cement bricks or geomembranes.

1) Cement bricks

The advantages of cement bricks are that they conserve water by reducing friction loss caused by earthen ditches, minimize erosion and invasive weed growth caused by irrigation, are easy to maintain compared to dirt ditches, and can be used in any field. Cement ditch feeds also work well with gravity systems as no pumping is required.

2) Geomembrane

The advantage of geomembrane ditches are that it's ten times faster than laying precast slabs or in-situ concrete as no mixing, measuring or compacting is required and the cost of installation is up to 60% less. Geomembrane ditches also help to prevent weed growth and erosion, reducing maintenance cost.

LATERAL MOVE CENTER

In a lateral move center, water is piped from the ditch to the sprinkler. Because ditches provide a large quantity of water more of your field at one time. If the irrigation system is designed with two wings, the span can be longer than 800m, and if the machine is made to move 2,000m, the total irrigation area could be up to 160ha.

The capacity of the pump and diesel engine depends on the size of the land and water application rate as well as the working speed of the machine. Pump and diesel engine are installed on the center pivot's cart. An alternator is installed at one end of the diesel engine to produce electric power for the machine while a water suction pipe and boat are installed on one side of the cart to pump water from ditch.

HOSE FEED

A lateral move system using a hose feed works in a linear movement to irrigate a rectangular area. Unlike center pivot system, where the area irrigated depends only on the length of the machine, the area irrigated by the lateral move system is determined by system length and travel distance.

Water is fed to the irrigation system by a flexible hose attached to the machine. The size of the hose is 6’ and 8’. The length can strength from 1 span to 7 spans, though not more than 7 spans because of the hose weight limitation 450m length. The hose feed system requires hydrants and an underground pipeline.

PIVOT POINT

I.D.	Weight	W.P.	Length
in.	KG/M	bar	M
6	1.32	4	100
6	1.45	6	100
6	1.65	8	100
6	2.80	10	100
8	1.92	4	100
8	2.08	6	100
8	2.33	8	100
8	3.60	10	100

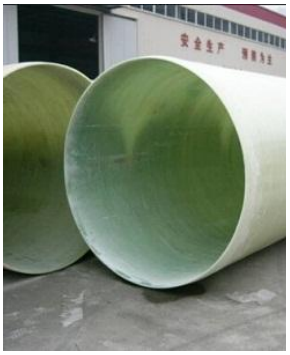
THE LEFT PARTS ARE THE SAME WITH FIXED CENTER PIVOT, PLEASE GO BACK FOR MORE DETAILED INFORMATION.

PIPE

GRP PIPE

Why fiberglass piping?

Long lasting
Non-corrosive
Impact resistant
Light weight
Fast and easy installation
Low installation cost
Cost effective



Fiberglass Piping Benefits:

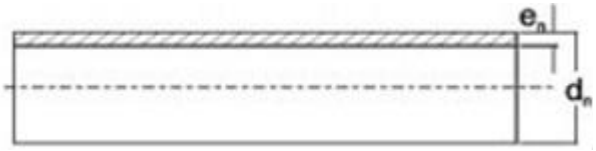
- Resistant to temperatures as cold as -75 °F
- Larger Diameter compared to metallic & PVC
- Lower life cost than steel
- 1/10 of the weight of steel
- Less live loads on a given structure
- Easy to install
- Excellent flow properties
- No corrosion inhibitors
- Less freight costs
- No cathodic protection required
- Low maintenance costs
- Wide variety of end connection

PE PIPE

PE Water Pipe: PE 100 Pipe

Technical Specifications	PE 100	Unit	Test Mechod
Density at 23° C	0.955	g/cm³	ISO 1183
MFR 190° /5 kg	0.23	g/10 min	ISO 1133
Mechanical Properties			
Yield Stress	23	MPa	ISO 527
Tensile Modulus	>1000	MPa	ISO 527
Notched Impact Strength			
+23° C			
-20° C			
Notched Impact Strength			
Oxidation-Induction Time at 210° C	≥20	min	ISO TR 10837
Carbon Black Content	≥2	%	ISO 6964
Resistance to S.C.P (slow crack propagation = 4.6 Mpa, 80° C Notched)	>1000	h	ISO 13479
Resistance to R.C.P (Rapid Crack Propagation S4-test 110/10 mm, ° C)	>10	bar	ISO DIS 13477
Elongation at break	≥500	%	ISO 6259
Linear Thermal Expansion	1.5×10^{-4}	°C⁻¹	ASTM D696(20-60°C)
Electrical Properties			
Electric Strength	>20	kV/mm	ASTM D149
Volume Resistivity	$>10^{16}$	ΩM	ASTM D257

Smooth ID (Hazen Williams C-140)



SDR: Standard Dimension

PN: Rate

dn: Nominal Outside Diameter

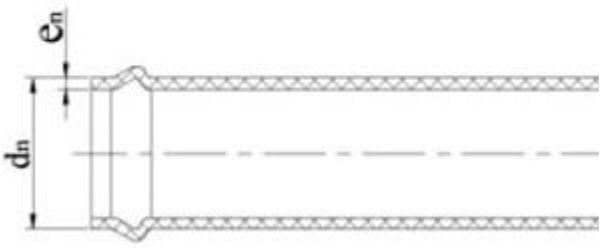
Nominal Pressure (unit: MPa)

en: Nominal Wall Thickness

PVC PIPE

Properties		Typical Value
Specific Gravity, g/cm³ (20°C)		1.35 – 1.46
Vicat Softening Temperature, °C		≥80
Longitudinal Reversion, % (150°C)		≤5
Dichloromethane Resistance Test, (15°C, 15min)		No Change
Falling Weight Impact Test, TIR, % (0°C)		≤5
Hydraulic Pressure Test	20°C, 1h, Hoop Stress is 36MPa (d_n < 40mm)	No Failure
	20°C, 1h, Hoop Stress is 38MPa (d_n ≥ 40mm)	No Failure
	20°C, 100h, Hoop Stress is 30MPa (All Size)	No Failure
	60°C, 1000h, Hoop Stress is 10MPa (All Size)	No Failure
Fitness Test for Purpose of the System	Leak tightness Test	No Failure
	Negative Pressure Test for Leak tightness*	No Failure
	Angular Deflection Test for Leak tightness*	No Failure
*For gasketed joint		

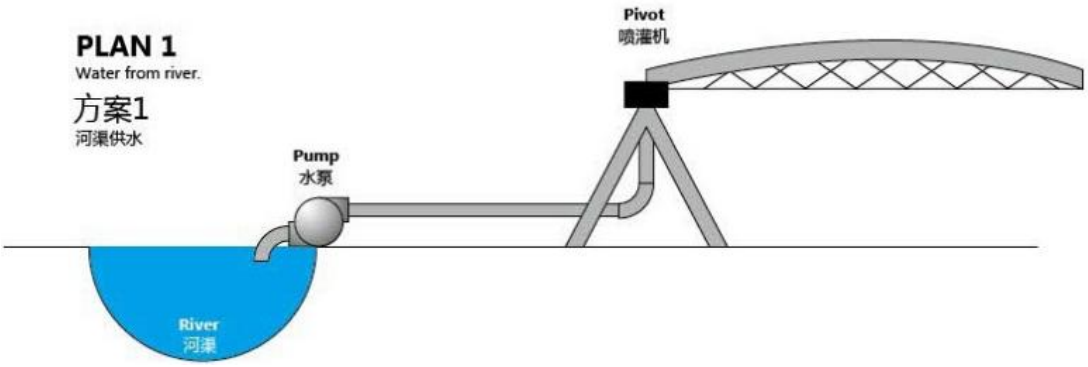
Smooth ID (Hazen Williams C-150)



dn: Nominal Outside Diameter
en: Nominal Wall Thickness
PN: Nominal Pressure (unit: MPa)
S: Pipe Series
SDR: Standard Dimension Rate

PUMP

RIVER PUMPS



1. End suction pump with electric motor

Our back pull out design eliminates the need to disturb the pump body and pipelines when servicing and has easy-to-replace parts. After reassembling, no time is consumed for realignment.

Capacity: up to 520m3/h
Head: up to 160m3/h
Temperature: up to 1100C
Speed: 1450/2900 rpm 1750/3500 rpm

2. Single Stage Double Suction Axially Split Casing Centrifugal Pump

NSC is a highly efficient double suction axially split single-stage centrifugal pump featuring a structure that works in many applications. This pump works both horizontally and vertically.

Capacity: 50 ~ 20000m3/h
Head: 10 ~ 280m
Temperature: up to 105 °C

3. Mixed-flow Sewage Pump

HW series mixed-flow sewage pumps with horizontal and vertical installation have the advantages of simple structure, reliable operation, easy installation and maintenance, high efficiency, small volume, light weight, etc.

Capacity: 9000m3/h
Head: 1.02-3.20m
Temperature: to 80 °C

4. Vertical Turbine Pumps

The VTP series vertical turbine pumps are normally designed to operate in wells or sumps, offering wide hydraulic operating range, using centrifugal mixed flow or axial impellers.

Capacity: 40000m3/h
Head: 300m
Temperature: up to 80 °C

5. Horizontal Multistage Centrifugal Pump

HMC horizontal ring section multistage centrifugal pumps are traditional multistage centrifugal pumps with wide application range, using grease-lubricated standard bearings and mechanical seals or packing.

Capacity: 1000m3/h
Head: 800m
Temperature: up to 105 °C

QUALITY CONTROL OF PUMP MANUFACTURING

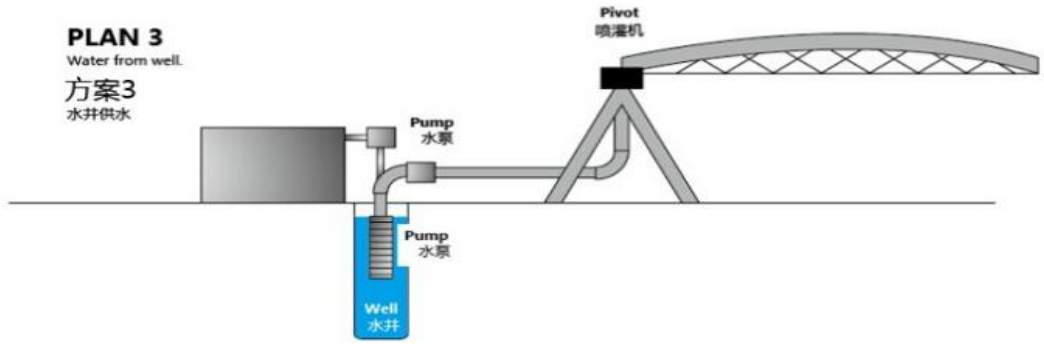
Excellent Pattern fabrication & Foundry facilities

All the castings are made from metal pattern and resin sand, and impellers are precision cast. Patterns are made with 3D technology and CNC machinery to ensure that our good hydraulic models can be transformed into high- efficiency products.

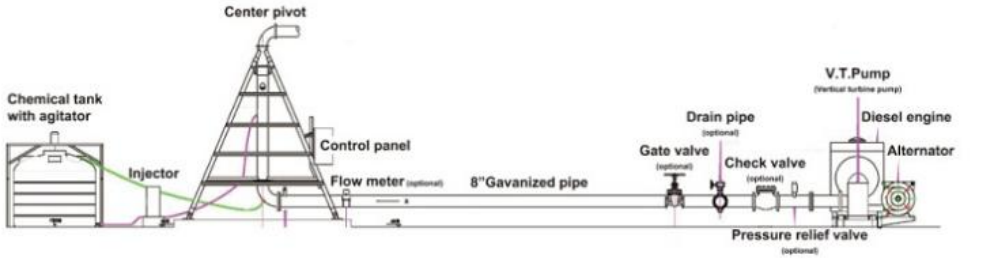
Pump testing

The crane used can lift 50 tons to a height of 12 meters, and the test pool used is 8,000 cubic meters with a depth of 12 meters. The maximum test power used is 5000kW, meeting many different standards and requirements. All tests are automatically operated to get the most reliable and accurate data.

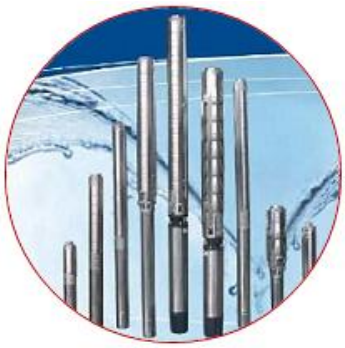
WELL PUMPS

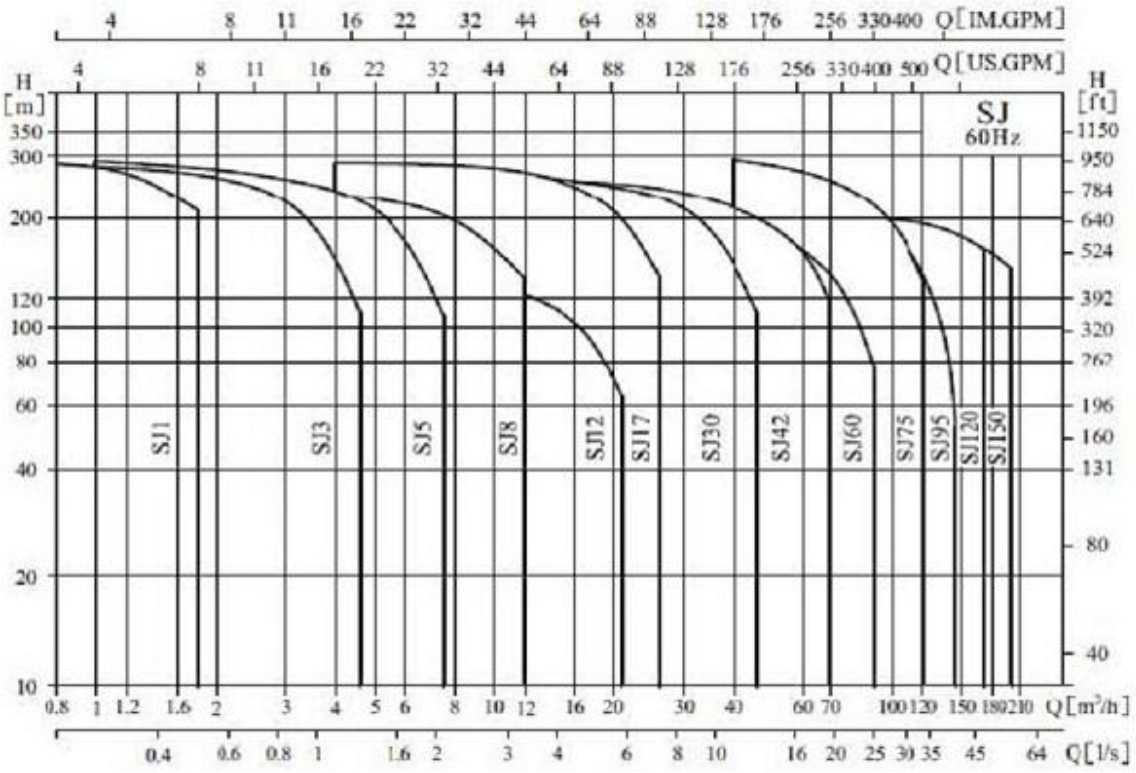


VERTICAL TURBINE PUMP



SUBMERSIBLE ELECTRIC PUMP





DIESEL GENERATOR

NEW INVENTION

DRIVABLE MOBILE PIVOT

TRADITIONAL TOWABLE MOBILE PIVOT

Traditional way of mobile pivot is called towable pivot. The pivot can only be towed by tractor from one place to another. The towing work is very complicated. Many labors are needed to unassembled the links of the u-joint and take off the drive shaft, release the gear box and turn the wheels by hands. Steel cables are needed to lock the first span and last span. One tractor is needed to tow the pivot from one place to another. After towing, the wheels have to be turned back to the working position and all the links of u-joint and drive shafts have to be reassembled again.

turn the pivot point

turn the wheels

lock the wheel

lock the last span

towing

turn the wheels back

turn pivot point back

restore drive shaft

RAINFINE DRIVABLE MOBILE PIVOT

The new concept Rainfine drivable mobile pivot:

1. Two wheels on the span can be turned automatically by the motor in the center of the drive tube.
2. Four wheels on the pivot point can be turned by the motor in the center of the pivot.
3. Pivot can be driven by the motors to any place you want.
4. All the wheels can be turned back to the irrigation position by motors after towing.

Only one farmer is needed to do this work by switching on/off the switches on the panel.

turn pivot point

driving pivot

16 wires collector ring

turn the wheels

diesel generator

drivable control panel

PLASTIC TIRE

6-YEARS WARRANTY

Rainfine plastic tire, constructed of super strong composite material, offer you the best solution for center pivot irrigation equipment.

(1)No worry for going flat-ever, no maintenance for seasons;
(2)Highest UV protection from sunshine;
(3)Self cleaning on muddy soil;
(4)Wider tread for better flotation;
(5)Offset tread for good traction on terrain field;
(6)Fit standard pivot wheel;
(7)Independent 16 pads for easy replacement;
(8)Less slipping design for tough conditions;
(9)Long life by 6 years limited warranty.

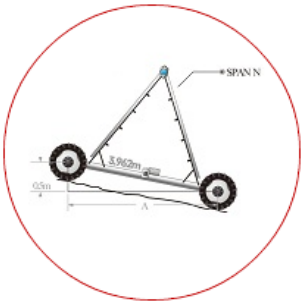






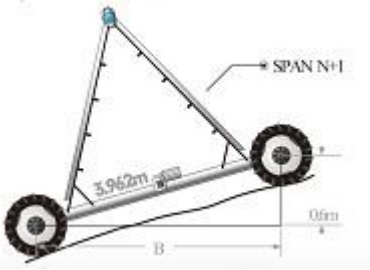

DESIGN

PIVOT SLOPE DESIGN



Slope design:

Our pivot design works on both flat land and hills. We can help farmers maximize the use of their land by calculating the pivot's slope limitations. If you are unsure of how our pivot would work on your land, please contact us directly.



$$A = \sqrt{3.962^2 - 0.5^2} = 3.930$$

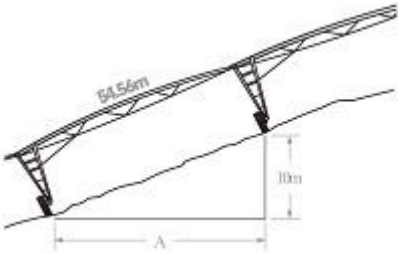
$$\text{Slope N} = \frac{0.5}{3.930} \times 100\% = 12.7\%$$

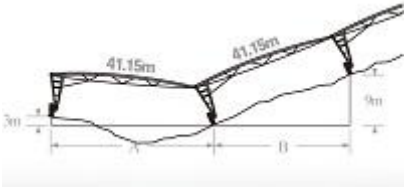
$$B = \sqrt{3.962^2 - 0.6^2} = 3.916$$

$$\text{Slope N+1} = \frac{0.6}{3.916} \times 100\% = 15.3\%$$

Slope Total = 12.7% + 15.3% = 28%

The maximum allowable slope in this situation is 30%.





$$A = \sqrt{54.56^2 - 10^2} = 53.63$$

$$\text{Slope} = \frac{10}{53.63} \times 100\% = 18\%$$

$$A = \sqrt{41.15^2 - 3^2} = 41.04$$

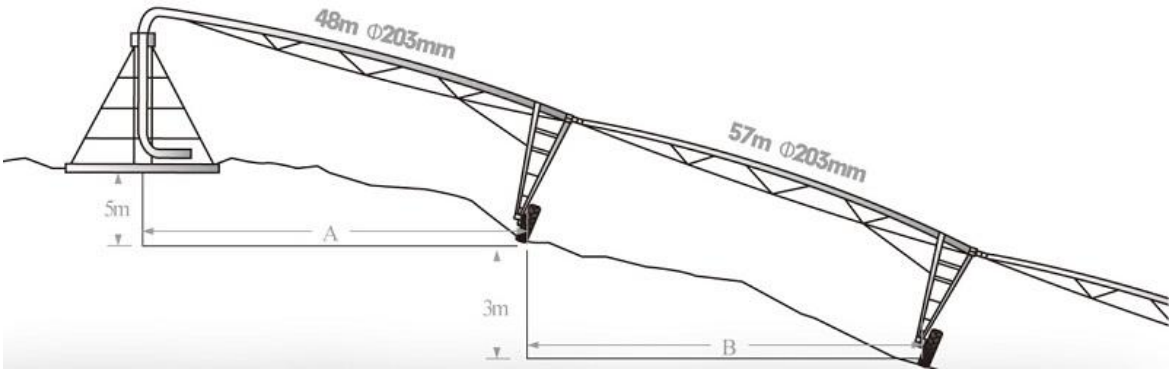
$$\text{Slope A} = \frac{3}{41.04} \times 100\% = 7.3\%$$

$$B = \sqrt{41.15^2 - 9^2} = 40.15$$

$$\text{Slope B} = \frac{9}{40.15} \times 100\% = 22.4\%$$

Slope Total = 7.3% + 22.4% = 29.7%

The maximum allowable slope in this situation is 29.7%.



$$A = \sqrt{48^2 - 5^2} = 47.74 \qquad \text{Slope A} = \frac{5}{47.74} \times 100\% = 10.47\%$$

$$B = \sqrt{57^2 - 3^2} = 56.92 \qquad \text{Slope B} = \frac{3}{56.92} \times 100\% = 5.27\%$$

The total continuous slope is slope A + slope B + ···

DESIGN ADVICE

Even in this day and age, we come across many farmers that are not well informed about the makings of an irrigation system, let alone how to be cost efficient. This is not an issue however, because we would like to help you with both of these issues!

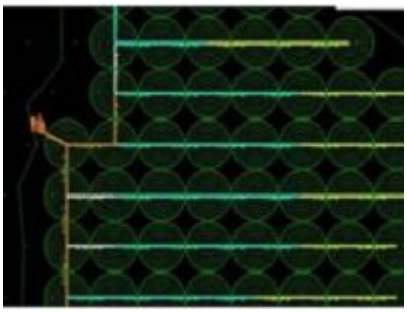
To design a great irrigation system, it takes a lot of knowledge about irrigation as well as all of the involved equipment including pipes and pumps. Our designers specialize in center pivot, lateral move systems, pipes and pumps. We use an highly specialized irrigation design software that is also capable of handle the design of a water distribution system. The software uses Google Earth data to create topographic maps of the land at question. We ask our customers to send us a map of their land using Google Earth via a KML file. Having this resource allows us to include key elements such as elevation, boundaries and water sources, all at an extremely low cost. Surprisingly, Google Earth (based on satellite imaginary) is usually more accurate then a traditional land survey and it is certainly a lot more cost effective.

Elevation differences in the land are then used to calculate water pressure as well as the underground pipeline size. These calculations are done automatically, making this program some of the most advanced software available to irrigation design companies!

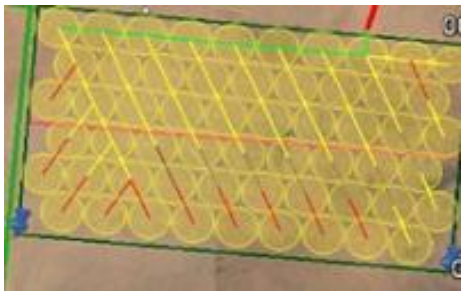
An example of a Google Earth, kml file. Here we can see fields represented by three boundaries from separate farmers that are working together to save on their investment. The red lines represent the channels under construction that will lead to the field where a dam will be built.

There are many designers, who design and place irrigation circles in an incorrect manner, leaving huge amounts of wasted land between pivot circles. Some might place an end gun at the end of a pivot, but this is clearly a minimal improvement when compared with a properly designed system.

Certainly more equipment is needed to implement a proper irrigation design, but our designs will return investments far quicker than any conventional design. Farmers want to make money, and wasted land is wasted crop production. See an example of a conventional, inefficient system below.



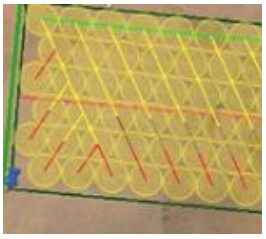
Conventional design with wasted land between pivots



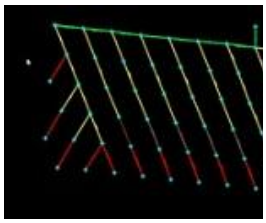
Correct design that maximum land capabilities.

Effective Placement

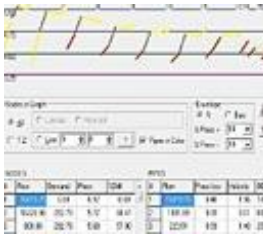
When our designers consider the placement of center pivots, they look as where land may be wasted between pivot rotations and how best to reduce that waste. End gun at the end of pivots is one way to help reduce the chance of un-irrigated land; more machines or a combination of different systems is another way. Our goal is to help farmers be able to use as much as their land as they can for crops. Check out the example below.



A pipeline design for a past project



Different diameter pipe in colour



A hydraulic simulation model

A exported design into Google Earth

Long term savings

The best way to save money is to consider a project from start to finish, including the quality of the materials, placement of pivot, and long-term cost-effectiveness. Our designers consider all options, using data about the distance and hydraulic systems to find out where money can be save long-term. For example, designing for lower pressure in pumps is more cost-effective as the pumps in the pump station will be small and cheaper. Our designers will run each plan through the program's hydraulic simulation to find any error before proceeding.

Turnkey Projects

The more people and companies involved in a project, the costlier the project may become as everyone wants to make their profit. By providing turnkey projects, we can offer competitive prices and more free services. We will also be more knowledgeable about your needs and able to offer more personalized and better irrigation solutions.

If you do buy your equipment from different suppliers, you should talk to the center pivots manufacturer first and make sure that all equipment will work together. The best way to find manufacturer of valve, pumps and pipes is to consult your pivot manufacturer.

Advance software

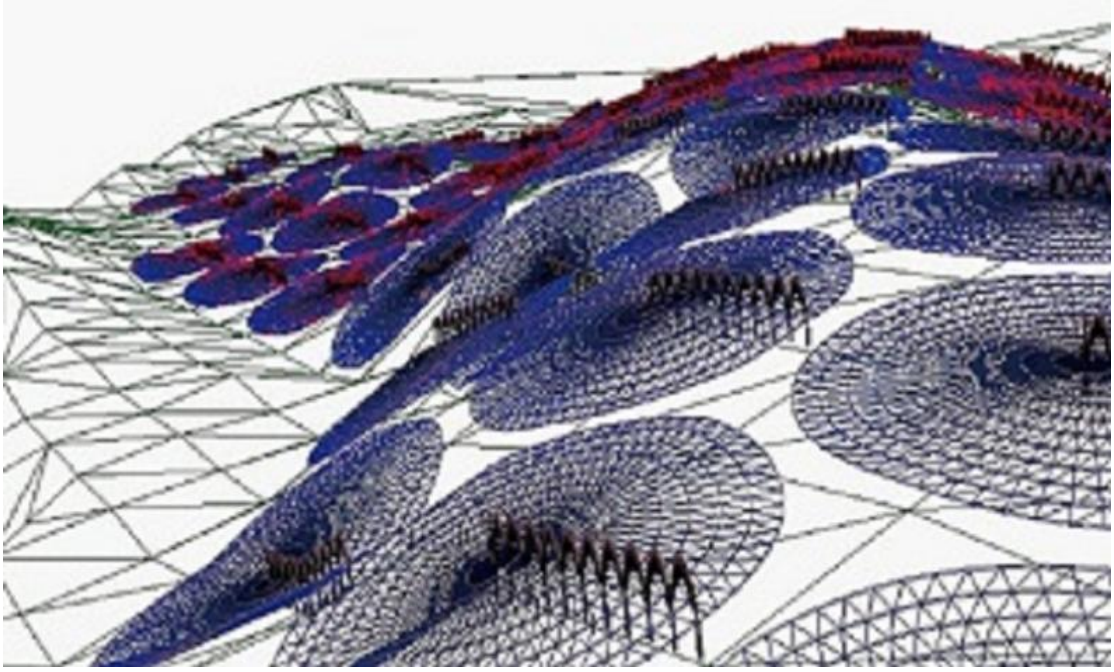
We use the best software for irrigation design on the market to calculate pipe sizes and pump pressures, run hydraulic simulations, find water application rates and even give GPS points for center pivot. It can calculate the end pressure of center pivots, inlet pressure, water harmer protection, friction loss in pipeline and the pressure on each valve. Then the program will design an irrigation plan, which we will test with survey work for higher accuracy. Compared to traditional land surveys or older programs such as Autocad, this software saves time and money and is also for more accurate.

Consistent Materials

Many manufacturers use different sizes of spans, diameters of pipelines, gooseneck spacing and overhang sizes. Our designers use the actual sizes of equipment we provide. If you want to create an irrigation design using another manufacturer's machines, our designers will need to rework the design with the correct pipelines, however are free of charge, and we supply all the irrigation equipment, center pivots, pipes, pumps and valves from our long-term partners in China.

If you have any questions about design, contact our designer Dalibor Turek.
Email: daliborturek@rainfinechina.com
Tel: +86-411-82731882
Fax: +86-411-82723748

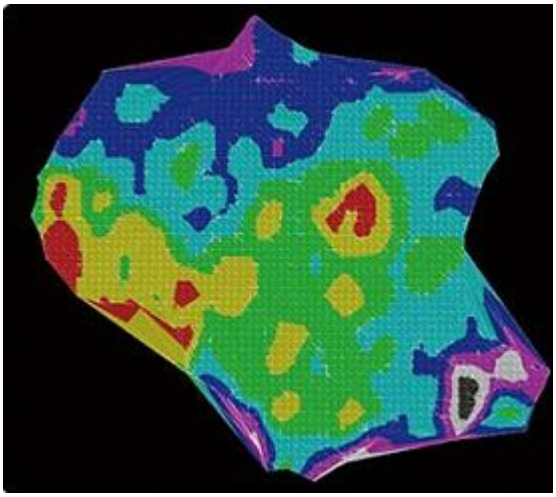
FREE DESIGN



Rainfine uses US-based global satellite imagery and software to create topographic maps of your land. This topographic map can be used to calculate records such as the charge head of the pump station and the pipe pressure of the water transport system according to the requirements of center pivot or lateral move systems. No matter where you are on the globe, our technology will help to give you a clear picture of the investment and possible budget plans. Best of all, these services are completed free of charge for qualified customers!

If you would like an irrigation design for your farm, please follow these steps:

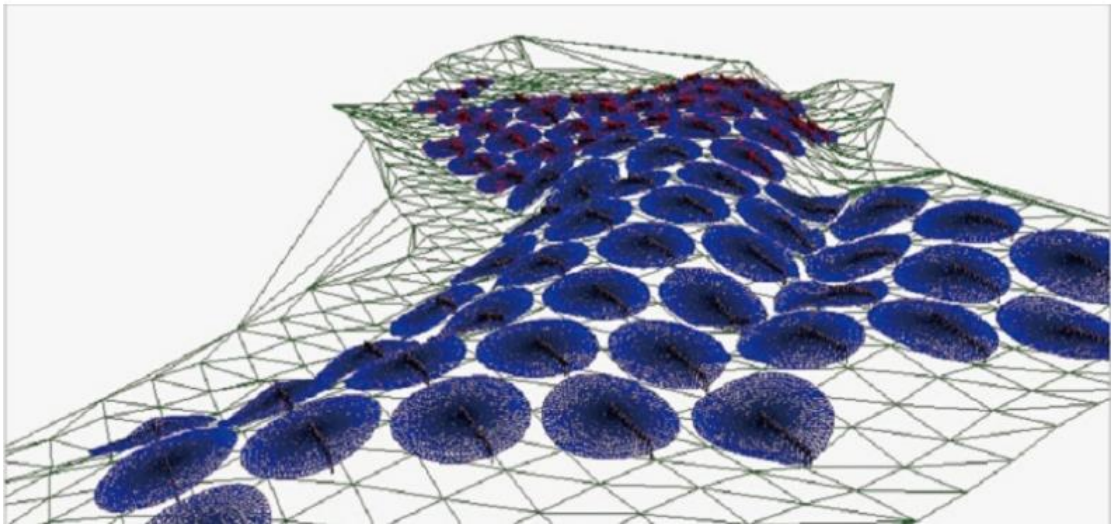
1. Open the Google Earth application on your computer
2. Mark the boundaries of your farm
3. Mark the location of your water source, such as: dam, bore well, river, canal, etc.
4. Mark any obstacles in your field, such as: house, trees, telegraph poles, roads, etc.
5. Let us know how much water will be needed (mm/24hr) on your land.
6. Use KML files to show the features from steps 2-4 in the picture.
7. Send email to our international sale: daliborturek@rainfinechina.com



Using our advanced software, our designer will provide you with:

1. Topographic map in color and 3D view of the farm;
2. Irrigation shift arrangement;
3. Irrigation equipment layout;
4. Piping network / fittings / valve design;
5. Pump or pump station system;

6. Electric / diesel power solution;
7. Tested water system;
8. Technical report for irrigation equipment, pipe lines and pumps;
9. Technical report for water hammer protection;
10. Equipment list;
11. Budget plan.



CONTACT US

Corporate with us, if you also devote yourselves to irrigation field. Welcome friends all over the world to give Rainfine, also yourself, an opportunity, all for our bright future.

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