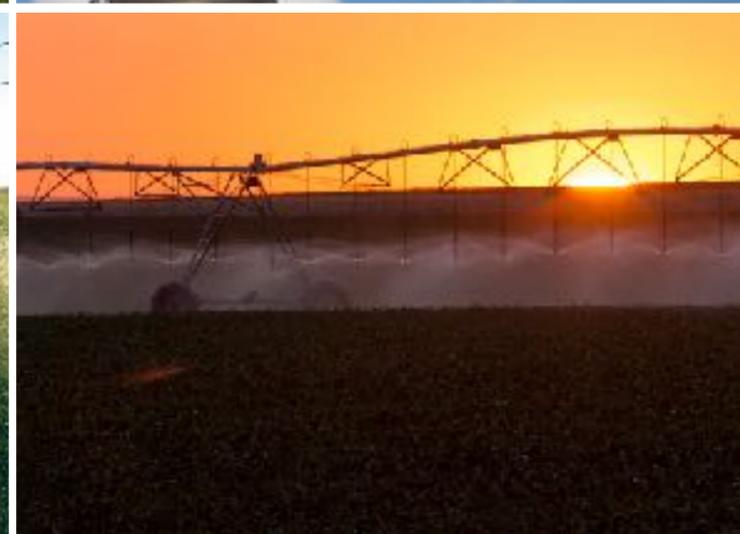




ZHONGHUI (DALIAN) IRRIGATION EQUIPMENT CO., LTD.



Ms. Shi

Marketing Director

Mobile

0086 136 0425 8779
0086 159 4083 3390

Email

office@zhirri.com

31-8#, Jinzhou, Dalian, China • 0086 8787 8791 • 400 626 6373 • www.zhirri.com

Factory: Daweijia, Jinzhou, Dalian, China • Branch: Yulong Industrial Zone, Mongolia, China WhatsApp

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THE ZHONGHUI ADVANTAGE

IRRIGATION SOLUTIONS FROM PUMP TO PROFIT, ALL IN ZHONGHUI

Your success depends on selecting irrigation products and technologies which maximize your profit and minimize your risk. Zhonghui irrigation system and advanced control technologies will make the most of your operation. We have partners who can provide pumps, generators and sprinklers with super quality. You can find every irrigation products to support your farm business.



Energy, water, labor and time: saved

Compared to other irrigation method, center pivots and laterals will help increasing crop yields while using less energy, water, labor and time.

Downtime: minimized

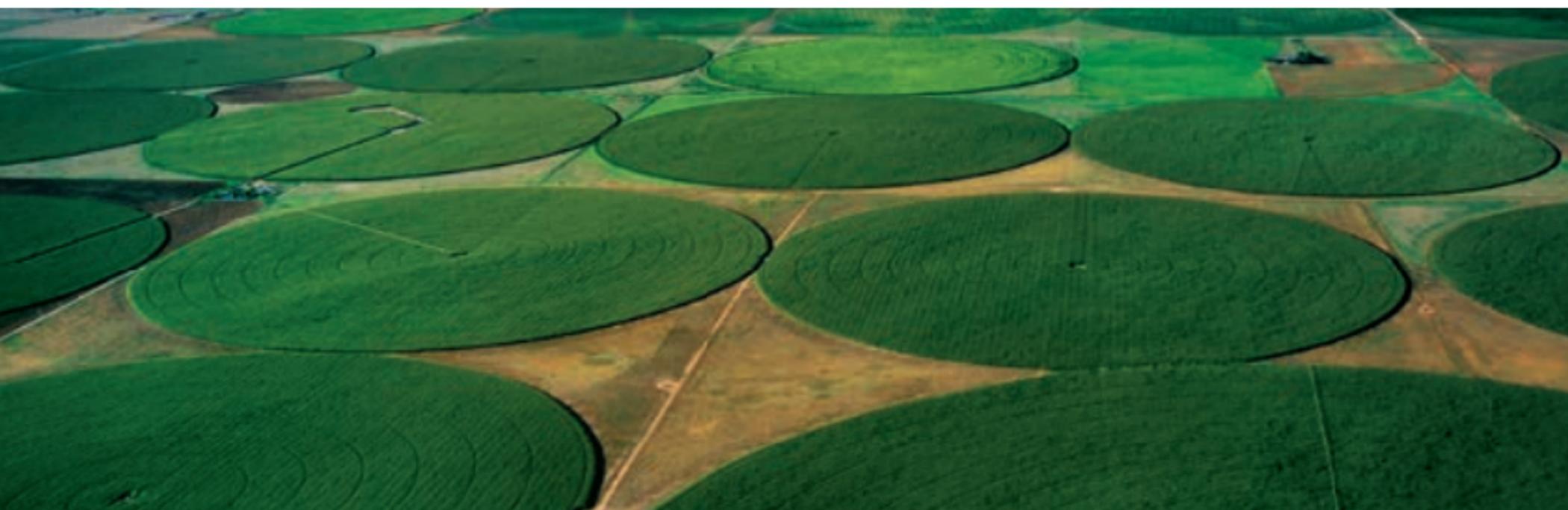
Zhonghui irrigation systems are designed and engineered for life on the farm. They are constructed using only the highest quality components for superior performance season after season.





ZHONGHUI (DALIAN) IRRIGATION EQUIPMENT CO.,LTD.

CENTER ● TOWABLE ● LATERA
PIVOT PIVOT L
global manufacturer of irrigation equipment since 2006



WHO IS ZHONGHUI ?

ABOUT ZHONGHUI

With 3 years experiences of providing OEM services for world famous irrigation system manufacturer, Zhonghui irrigation systems are designed with advanced technology. Each irrigation system is designed for specific climatic, topographical and cropping conditions. Now, we have 2 factories manufacturing irrigation systems in China and plan to establish the third factory in Russia. Zhonghui fulfills duties everyday to make people enjoy the harvest.

OUR MISSION

- Save Water Resources
- Increase Crop Yields

MAIN CERTIFICATION

- ISO9001:2008
- Bureau Veritas Certification

TWO FACTORIES

- Daweijia, Jinzhou, Dalian
- Yulong, Chifeng, Mongolia



HISTORY

- 2006** Manufacture flanges, steel pipes and truss rods, mainly exported to America
- 2008** Began to manufacture more irrigation system parts and provide OEM service
- 2009** Develop domestic market and got the first center pivot order with 320 meters
- 2010** Put 3-wheel, 4-wheel towable pivot into market
- 2011** Zhonghui unveiled lateral irrigation system which gives growers another option
- 2015** Smart G1 control panel was developed with remote control function

PROCESSING EQUIPMENT



WHO IS THE WELDER

Zhonghui uses 8 **Panasonic robots** instead of workers to weld the flanges, anchors etc. As we know, on the process of manually welding, it is very difficult to control the welding speed and cause the quality problem. Pipes are the most important parts of the irrigation system, robot welders will guarantee the quality.



Flanges

Anchor



BENDING MACHINE



SHEARING MACHINE



PUNCHING MACHINE

STOCK AVAILABILITY



10,000 METERS STOCK ALL YEAR ROUND

In order to delivery the irrigation system as soon as possible, Zhonghui has 10,000 meters stock all year round.



MAIN LINE PIPES



DRIVE TUBES



SPAN BRACKETS



PIVOT AND TOWER LEGS



PIVOT AND TOWER END JOINT



TRUSS RODS



TYRES



CENTER DRIVE MOTOR



GEAR BOX

WHY PIVOTS AND LATERALS ?



YIELD OF VARIOUS CROPS WITH AND WITHOUT IRRIGATION		
Crop	Irrigated Yield	Non-Irrigated Yield
Alfalfa ¹	4.9 tons/ac (11.0 MT/ha)	2.5 tons/ac (5.6 MT/ha)
Corn ¹	180 bu/ac (11.3 MT/ha)	144 bu/ac (9.0 MT/ha)
Grain Sorghum ¹	86.9 bu/ac (5.5 MT/ha)	69.2 bu/ac (4.3 MT/ha)
Potatoes ²	391 cwt/ac (43.8 MT/ha)	215 cwt/ac (24.1 MT/ha)
Sugar Cane ²	39.6 ton/ac (88.8 MT/ha)	32.6 ton/ac (73.1 MT/ha)
Wheat ¹	80.3 bu/ac (5.4 MT/ha)	37.0 bu/ac (2.5 MT/ha)

Sources: ¹ 2007 USDA Census of Agriculture (Table 32. US wide)
² 2002 USDA Census of Agriculture (Table 32. US wide)

ENJOY MANY MONEY-SAVING YEARS

When you convert to mechanical move irrigation, you are using a proven method of conserving water and improving your return on investment in time, labor, fertilizer and chemicals, while reducing deep percolation or runoff.

High return on investment

Your initial investment in a pivot or lateral system is relatively small compared to the money you will save in the long term. The long life of a pivot or lateral system will save you money year after year. You'll use less water, reducing your energy costs. Plus, if you ever want to sell, there is a high resale value on a pivot or lateral system.



GET MORE VALUE OUT OF LESS WATER

Increase yields through more uniform application

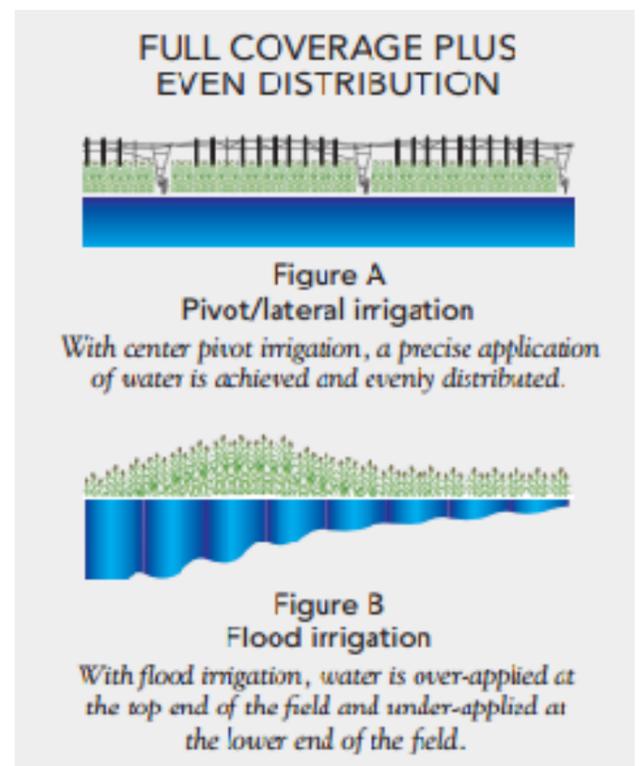
Low labor and maintenance costs

Reduce waste

Getting the correct amount of water on your crop at the right time is crucial to getting top yields, but it's also important to apply it uniformly. Zhonghui irrigation systems bring a cost-effective solution to alleviate risk when the weather turns dry.

With a Zhonghui system, you get even, precise water application across the field (Figure A), rather than having too much water at one end of the field and not enough water at the other end

(Figure B).

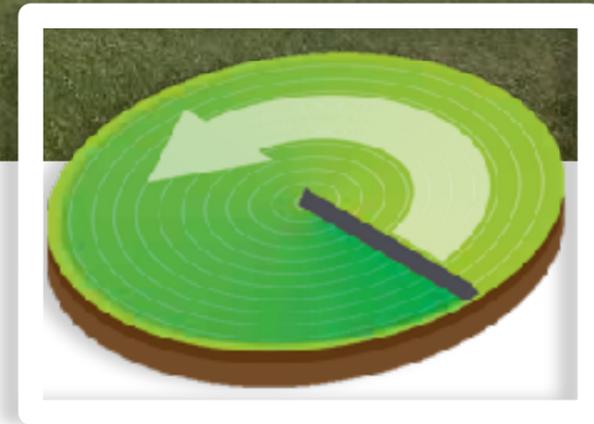


CENTER PIVOTS



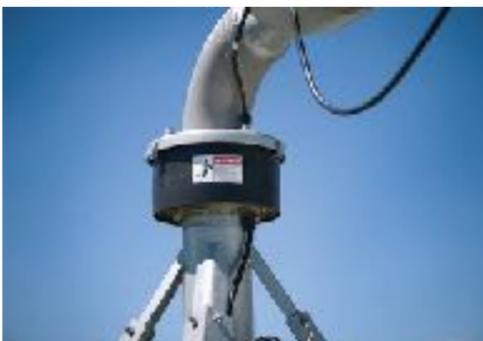
HIGH QUALITY DESIGN FOR MORE EFFICIENT IRRIGATION

Zhonghui center pivot irrigation systems are designed for both small and large fields. Each pivot is designed for specific climatic, topographical and cropping conditions. Zhonghui systems operate in deserts, on flood plains, on flat land and rolling hills, and on a variety of crops.



CENTER PIVOTS

One end of the machine is fixed and other spans move clock wise or anti clock wise by electric motor driven tires, this system is called center pivots irrigation system. Both river and bore well water can be supplied to the pivot point and transferred through main pipes and sprinklers, then applied on the top of the crops. 1 set center pivot irrigation system can irrigate from 1.2ha to 150ha. The advantage of this system is using less labor, money and water to improve crop yields.



COLLECTOR RING

The collector ring is mounted externally, eliminating water flow restriction.

The unit is entirely encased in fiberglass and features dual sliding contacts that ensure uninterrupted power.

Wires: 11

Circuit Voltage: 0-500V, AC/240VDC

Circuit Current: 30A/4

Rotating Speed: 0-60 r/min

Working Temperature: -20°C - +80°C



PIPES

The best quality flanges welded on pipes. 1mm penetration on the section of the welding part. 45° bended hammer impact test without cracking.

Galvanized thickness 4mil.

6 5/8" x 1/8" x 22'

(168mm x 3.2mm x 6.7m)

Galvanization : ASTM A123/123m-02



STRUCTURE

Structure designed with optimal strength and height to manage varies crops. The strong alloy steel increases strength, decreases weight and maintains the structural integrity of your system.

Rod diameter: 22mm

Yield strength more than 65,000PSI

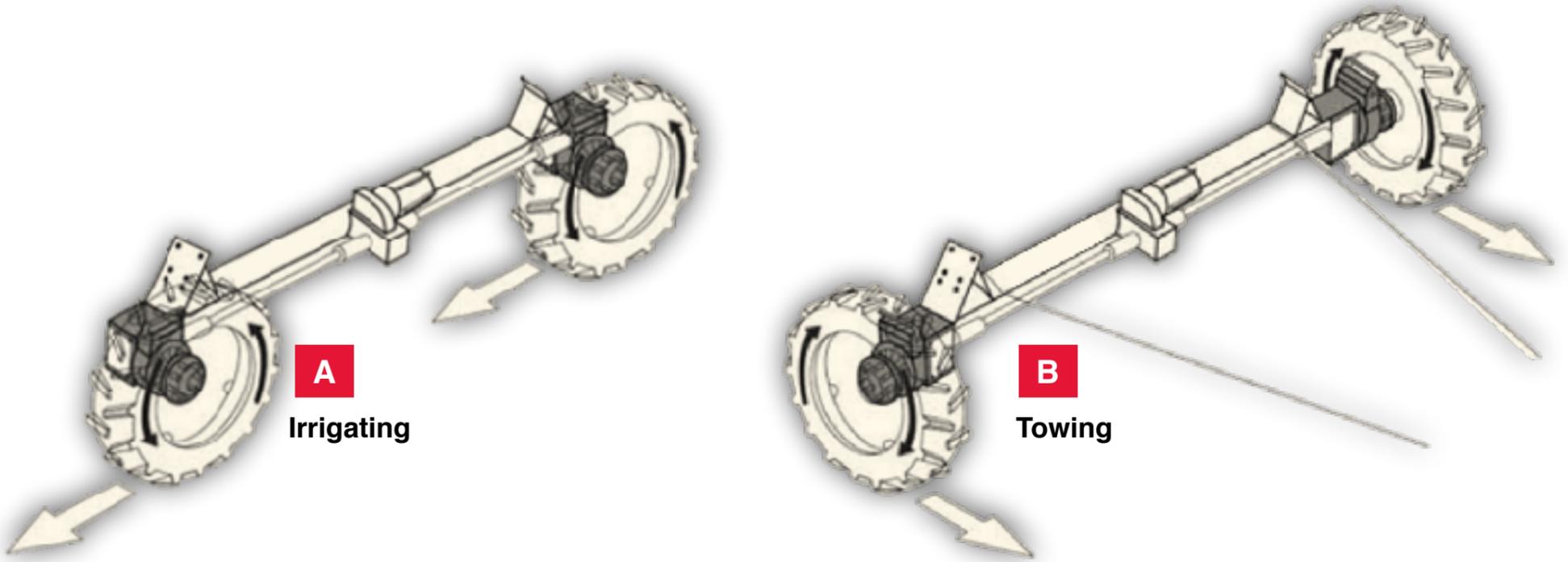
Crossed tower brace with more support

TOWABLE PIVOTS



IRRIGATION MORE FIELDS WITHOUT BUYING MORE EQUIPMENTS

Zhonghui offers three towable irrigation solutions that allow you to spread your investment over multiple fields. The system can be moved from one place to another by towing pivot point with tractor. The advantage of this design is to use one machine for two or three different land and the investment is more economical.



SKID TOWABLE PIVOT



3-WHEEL TOWABLE PIVOT



4-WHEEL TOWABLE PIVOT

Maximum Length: **411 m** (1,350 feet)

Field Covered: **53 ha** (130 acres)

LATERAL SYSTEMS



LATERALS-MAXIMUM COVERAGE

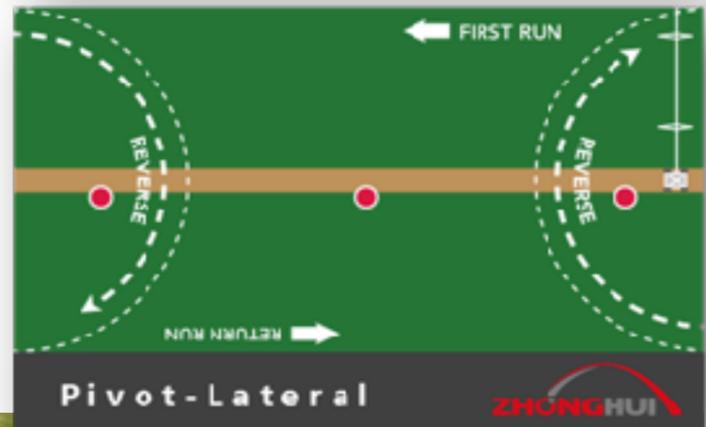
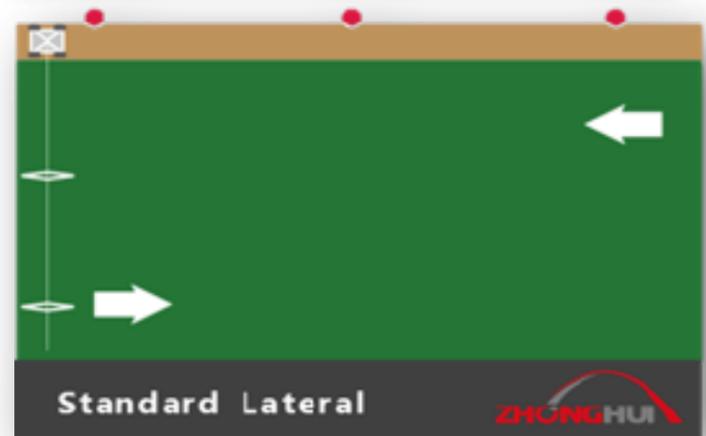
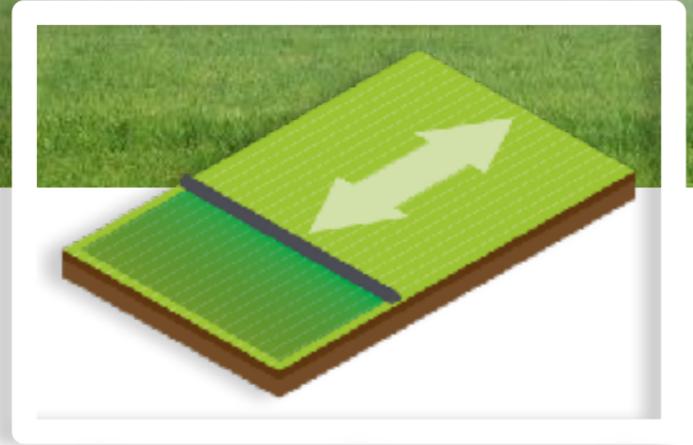
The whole irrigation system runs in a linear movement by motor driven wheels to irrigate rectangle area, it is called lateral or linear irrigation system. If you have a square or rectangle field, a standard lateral irrigation system can add 98% more of your crop into full production. With a choice of water supply, each system can be customized to meet your individual requirements.

HOSE-DRAG

- Supplied with water through a large diameter hose attached to the cart
- Uses 4-wheel cart with 100, 150, 200 mm hose (depending on water flow)
- Diesel generator should be mounted on the cart, providing power while the irrigation system moving

CHANNEL-FEED

- A channel should be built at the field edge or in the center to supply water, 4-wheel cart
- Water is supplied through a floating intake or a floating self-cleaning filter screen
- Diesel generator and pump should be mounted on the cart, channel is built with concrete or plastic covered

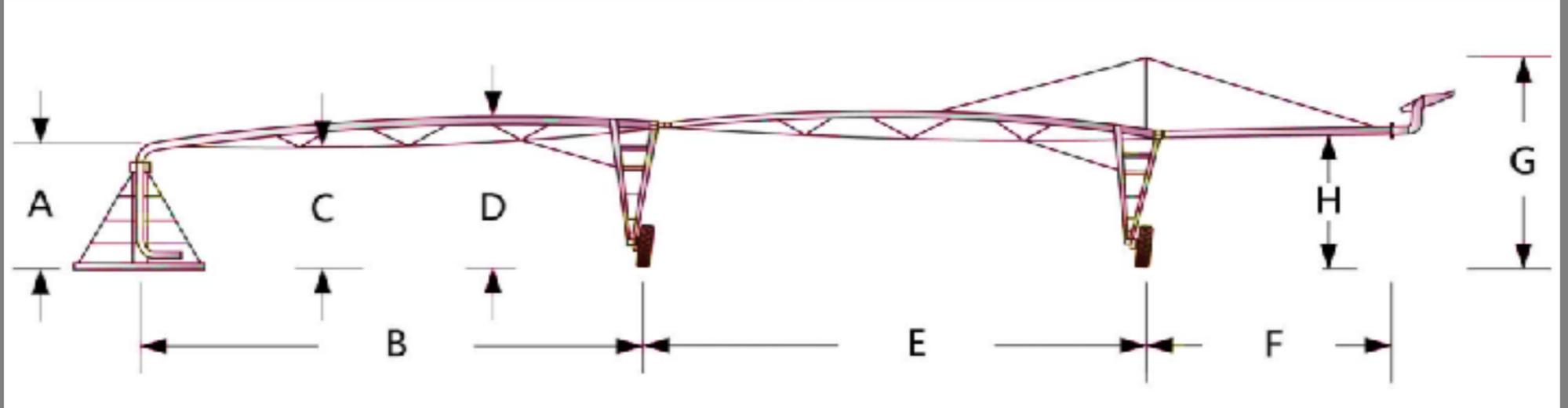


Hose-Drag



Channel-Feed

SYSTEM DIMENSIONS



SPAN DIMENSIONS

Pipe Size	Span Length	A	B	C	D	E
5-9/16"-141mm	179'-54.56m	12'10"-3.91m	180'-54.86m	9'6"-2.9m	14'10"-4.52m	179'-54.56m
5-9/16"-141mm	157'-47.85m	12'10"-3.91m	158'-48.16m	9'9"-2.97m	15'1"-4.60m	157'6"-48.01m
6-5/8"-168mm	201'-61.26m	12'10"-3.91m	201'3"-61.34m	10'1"-3.07m	15'1"-4.60m	200'2"-61.01m
6-5/8"-168mm	179'-54.56m	12'10"-3.91m	180'2"-54.91m	9'6"-2.90m	14'10"-4.52m	178'11"-54.53m
6-5/8"-168mm	157'-47.85m	12'10"-3.91m	158'1"-48.18m	9'11"-3.02m	15'2"-4.62m	157'1"-47.88m
6-5/8"-168mm	135'-41.15m	12'10"-3.91m	136'-34.57m	9'8"-2.95m	14'10"-4.52m	135'-41.15m
8"-203mm	179'-54.56m	12'10"-3.91m	180'2"-54.91m	9'6"-2.90m	14'10"-4.52m	178'11"-54.53m
8"-203mm	157'-47.85m	12'10"-3.91m	158'-48.16m	9'10"-3.00m	14'10"-4.52m	157'-47.85m
8"-203mm	135'-41.15m	12'10"-3.91m	136'1"-41.47m	9'7"-2.92m	14'7"-4.45m	135'2"-41.20m
10"-254mm	135'-41.15m	13'2"-4.01m	135'9"-41.37m	9'2"-2.79m	14'2"-4.32m	135'-41.15m

SYSTEM DIMENSIONS

OVERHANG DIMENSIONS

OH Length	F	G	H
22'-6.7m	25'-7.62m	17'6"-5.33m	11'5"-3.48m
44'-13.4m	47'-14.32m	17'6"-5.33m	11'5"-3.48m
66'-20.1m	69'-21.03m	22'-6.7m	11'5"-3.48m
88'-26.8m	91'-27.73m	22'-6.7m	11'5"-3.48m

NOTE

Dimensions will vary due to tire size, terrain and installation procedures. All values are based on "without water" situation.



SPAN WEIGHTS

Span Size	Span Length	"Without Water"	"With Water"
5-9/16"-141mm	179'-54.56m	3712 lbs - 1682.29 kg	5450 lbs - 2469.94 kg
5-9/16"-141mm	157'-47.85m	3414 lbs - 1547.22 kg	4940 lbs - 2238.81 kg
6-5/8"-168mm	201'-61.26m	4917 lbs - 2228.38 kg	7700 lbs - 3489.64 kg
6-5/8"-168mm	179'-54.56m	4438 lbs - 2011.30 kg	6920 lbs - 3136.14 kg
6-5/8"-168mm	157'-47.85m	3875 lbs - 1756.15 kg	6050 lbs - 2741.86 kg
6-5/8"-168mm	135'-41.15m	3506 lbs - 1588.92 kg	5380 lbs - 2438.22 kg
8"-203mm	179'-54.56m	4589 lbs - 2079.73 kg	8256 lbs - 3741.62 kg
8"-203mm	157'-47.85m	4172 lbs - 1890.75 kg	7387 lbs - 3347.79 kg
8"-203mm	135'-41.15m	3702 lbs - 1677.75 kg	6467 lbs - 2930.84 kg
10"-254mm	135'-41.15m	4230 lbs - 1917.04 kg	8630 lbs - 3911.12 kg

To estimate the shipping weight of a machine, add 55 lbs. to each span selected for shipping containers and dunnage. This will give the total span weight for a machine with 14.9 tires. For a 44' overhang, add 660 lbs. The actual shipping weight will vary due to options ordered. See examples below.



Examples:

5 spans of which 3 towers are 201' / 6-5/8" and 2 towers are 179' / 6-5/8" = 23,627 lbs.

7 spans of which 5 towers are 179' / 6-5/8" and 2 towers are 179' / 5-9/16" = 29,614 lbs.

12 spans of which 6 towers are 157' / 8" and 4 towers are 179' / 6-5/8" and 2 towers are 157' / 5-9/16" = 49,612 lbs.

SOME STEEL PARTS



HEAD WELDMENT

ELBOW WELDMENT

RISER PIPE



PIVOT END JOINT

TOWER END JOINT

ALIGNMENT RING



MAIN LINE PIPE

OVERHANG PIPE

PIVOT & TOWER LEGS



CENTER ANCHOR

OVERHANG PIPE

PIVOT ANCHOR



TRUSS ROD

TRUSS BRACE & TOWER TIES

ROD ANCHOR

CENTER DRIVE



POWERSAVER-EFFICIENCY-DURABILITY

The most efficient gear motor for center pivots and lateral irrigation system. It is available with a 3 phase, 460/380-volt AC, 60/50 HZ electric motor. It is designed to work with global power sources. The grower is able to precisely control water application while saving energy.

FEATURES AND BENEFITS

- ① Efficiency: 95%
- ② 40:1 ratio, 3/4 HP
- ③ Voltage: 460V 60 Hz, 380V 50 Hz
- ④ C.S.A., CCC, CE, and UL certified
- ⑤ Stainless junction box cover
- ⑥ Class H wire and Class F insulation
- ⑦ Spray guard for added moisture protection
- ⑧ Aluminum finned stator housing for cooler running temperature
- ⑨ High strength steel shafting for long life and dependability
- ⑩ Thermally protected with automatic reset



DRIVELINE COUPLER



FEATURES AND BENEFITS

- ① 1" rd. x 3/4" sq.
- ② Proven service record of over 25 years
- ③ Designed for extreme duty environments
- ④ Ideal for high torque low speed conditions
- ⑤ Alignment rod holds insert in place and coupler in alignment under extreme loads
- ⑥ Curved pressure pads compensate for out of line conditions



HEAVY DUTY GEARBOX



GEARBOX PROVEN FOR LONG-LASTING PERFORMANCE

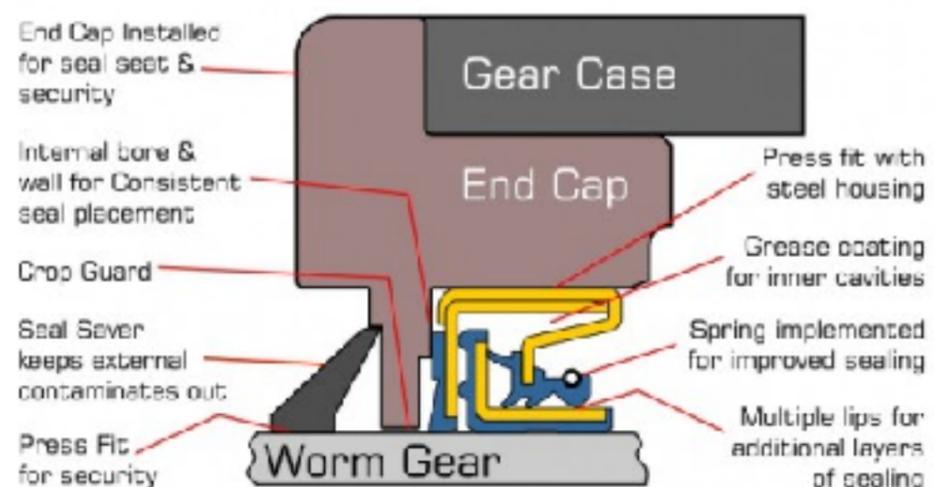
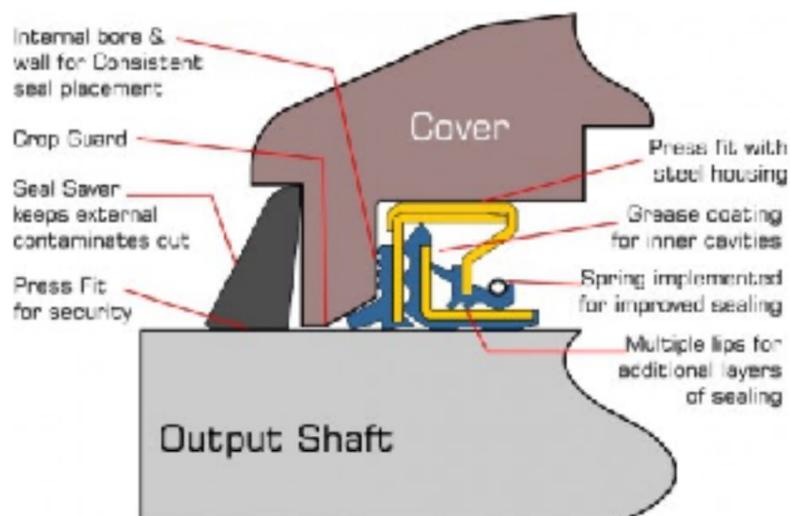
Zhonghui heavy duty gearbox is a step up from UMC moderate duty gearbox. It is designed for use on towers that support longer spans and/or larger diameter pipes in fields where wheel rutting is not an issue and soil is generally light. The larger diameter output shaft and larger output bearings enable this gearbox to handle more overhang load caused by heavier towers.

FEATURES AND BENEFITS

- ① 2.25" output shaft
- ② 50:1 gear ratio
- ③ Dual input seals and triple lip output seal
- ④ Input shaft guard
- ⑤ External seal protectors for input seals
- ⑥ Top oil fill plug
- ⑦ Universal mounting pattern
- ⑧ Full cycle expansion chamber with stainless steel cover
- ⑨ Filled with extreme pressure worm gear oil
- ⑩ Steel output shaft and input shaft
- ⑪ Tapered roller bearings
- ⑫ Includes carriage bolts and nuts
- ⑬ Dual ended input shaft



SEALING SYSTEM



TNT-2 TOWABLE GEARBOX



TNT-2 GEARBOX ESPECIALLY FOR TOWABLE PIVOTS

TNT-2 gearbox is the perfect solution for a towable irrigation system. Growers typically prefer this gearbox over a gearbox with a towable hub. Simply disengage the worm and tow your system to its working location, then re-engage the worm and you are ready to run. The CX coupler is the perfect compliment for the TNT-2 gearbox due to the ability to control coupler disengagement at the gearbox.



FEATURES AND BENEFITS

- ① 2.25" output shaft
- ② 50:1 gear ratio
- ③ Dual input seals with triple lip output seals
- ④ Bronze gear optional
- ⑤ Input shaft guard
- ⑥ External seal protectors for input and output seals
- ⑦ Top oil fill plug
- ⑧ Universal mounting pattern
- ⑨ Full cycle expansion chamber with stainless steel cover
- ⑩ Filled with extreme pressure worm gear oil
- ⑪ Steel output shaft and input shaft
- ⑫ Tapered roller bearings
- ⑬ Includes carriage bolts and nuts
- ⑭ Dual ended input shaft



SPRINKLER OPTIONS



MAKE THE RIGHT CHOICE OF SPRINKLERS

We should never criticize mother nature, but sometimes rain-like irrigation is not the best choice for soil and crops. We will analyze your operation to help you customize a sprinkler package that meets your irrigation needs.



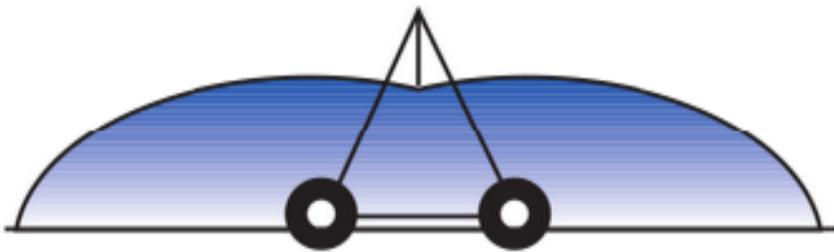
ROTATING SPRINKLERS



FIXED-SPRAY SPRINKLERS

Coverage/Pressure

12 to 74 ft - 10 to 50 psi
depending on sprinkler height and pressure
(3.7 to 22.6 m- 0.69 bar to 3.5 bar)



Featuring changeable deflector plates and a choice of individual stream designs, rotating or wobbling spray sprinklers are designed for greater coverage on heavier soils or rolling terrain.



Coverage/Pressure

7.5 to 47 ft - 6 to 40 psi
depending on sprinkler height and pressure
(2.3 to 14.3 m- 0.41 bar to 2.8 bar)



Available in a variety of options to match crop, climate and wind conditions, fixed-spray sprinklers are intended for use on lighter soils or flat terrain and can be adapted for in-furrow applications. These units are also compatible with both germination and chemigation plates.

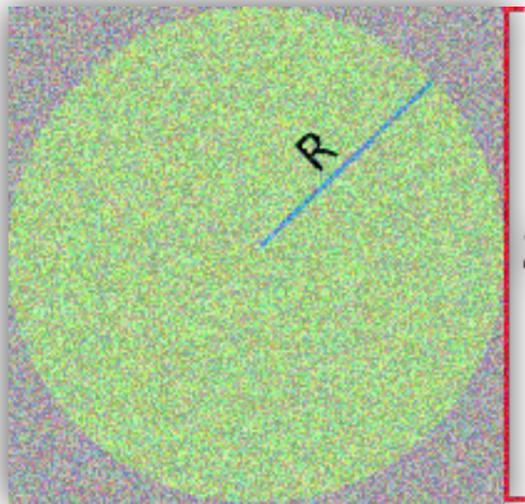


END GUN OPTIONS



A METHOD TO IRRIGATE CORNERS & MORE LANDS

End guns can add five to ten more irrigated acres (2 to 4ha) in a standard quarter section.



■ corners
■ covered by pivot

Area Irrigated By Pivots
 $=3.14 \times R \times R$

Corners Unirrigated
 $=2R \times 2R - 3.14 \times R \times R$
 $=0.86 \times R \times R$

Unirrigated Percentage
 $= \frac{0.86 \times R \times R}{2R \times 2R} \times 100\%$
 $=21.5\%$

21.5% land can not be irrigated, choose a right end gun will reduce this loss which depends on the spray range



Trajectory angle: 24°
 Pressure: 25-110 PSI
 Water Flow: 24-268 GPM
 Diameter: 148-371 feet



Trajectory angle: 24°
 Pressure: 25-80 PSI
 Water Flow: 27-158 GPM
 Diameter: 146-283 feet



Trajectory angle: 24°
 Pressure: 40-110 PSI
 Water Flow: 47-304 GPM
 Diameter: 191-380 feet

DIESEL GENERATOR OPTIONS

HIGH QUALITY DIESEL GENERATOR

Irrigation system and pump can not work without electricity which is from commercial power or diesel generator. For some regions, it is hard to connect the machines with commercial power, so it is very important for us to supply high quality diesel generator. We cooperate with Chinese most famous generator manufacturer to offer various diesel generator from 4.5kw to 90kw for both irrigation systems and pumps.



PHOTOS

SPECIFICATIONS



STANDARD TYPE

Model	<i>KDE6500A ~ KDE19EA3</i>
Frequency	<i>50 / 60 HZ</i>
Prime Power	<i>4.5 kw ~ 15.2 kw</i>
Standby Power	<i>5 kw ~ 16.8 kw</i>
Dimensions	<i>720 x 492 x 655 mm ~ 1210 x 650 x 765mm</i>
Net Weight	<i>100kg ~ 320kg</i>



SILENT TYPE

Model	<i>KDE6500T ~ KDE115SS3</i>
Frequency	<i>50 / 60 HZ</i>
Prime Power	<i>4.5 kw ~ 90 kw</i>
Standby Power	<i>5 kw ~ 99 kw</i>
Dimensions	<i>910 x 530 x 740 mm ~ 2750 x 1150 x 1650mm</i>
Net Weight	<i>145kg ~ 1950kg</i>



OPEN TYPE

Model	<i>KDE30E3 ~ KDE115E3</i>
Frequency	<i>50 / 60 HZ</i>
Prime Power	<i>19.2 kw ~ 90 kw</i>
Standby Power	<i>20.8 kw ~ 99 kw</i>
Dimensions	<i>1450 x 780 x 1035 mm ~ 2150 x 865 x 1390mm</i>
Net Weight	<i>720kg ~ 1650kg</i>

FERTIGATION AND CHEMIGATION INJECTORS

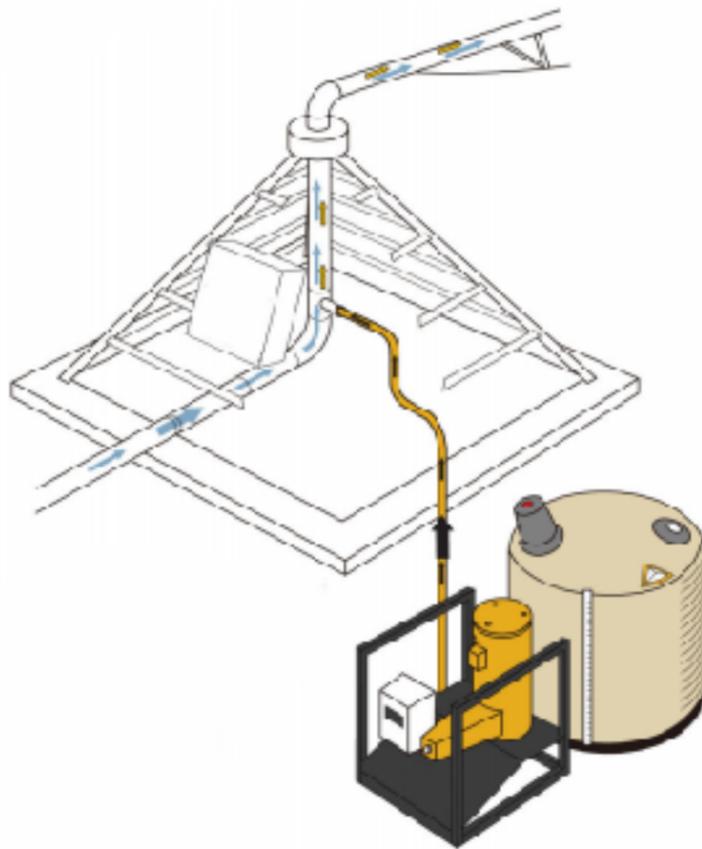


COMBINE IRRIGATION AND CHEMICAL INJECTION

Zhonghui injector is a complete solution designed for the uniform application of fertilizers, herbicides, fungicides, insecticides and other strong chemicals that require dilution and mixing.

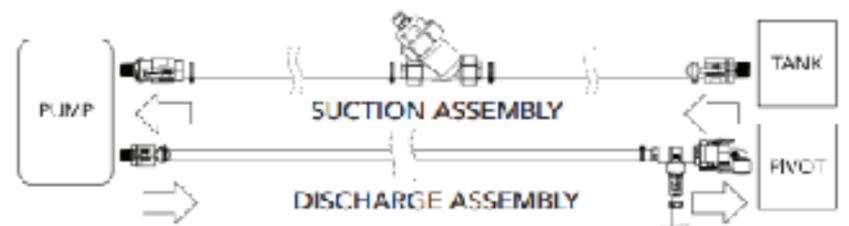
FEATURES AND BENEFITS

- Affordable and reliable
- Compatible with existing pivot systems
- Easy to handle and portable
- Bi-directional
- High quality materials
- Hydraulically-actuated diaphragm pump operates more reliably than other methods



MAIN SPECIFICATION

- Capacity up from 50 to 550 LPH
- Maximum pressure up to 15 bar
- Measuring accuracy reaches to 2%
- Within the scope of 10% - 100% flow rate
- Liquid temperature shall be $-10^{\circ}\sim 40^{\circ}$
- Maximum Suction: 2.5 meters
- Motor: 220V/380V, 50HZ



CASES



354.4 meters, Center Pivot, 6 Spans with overhang, 2012 , Australia



450 meters, Center Pivot, 8 Spans with overhang, 2013 , Paraguay



204 meters, Hose-Drag Lateral, 3 Spans with overhang, 2013 , Mongolia



388.9 meters, Skid Towable, 8 Spans with overhang, 2014 , Azerbaijan



409.4 meters, Center Pivots, 7 Spans with overhang, 2015 , Saudi Arabia



320.7 meters, Center Pivots, 5 Spans with overhang, 2015 , Canada

Fulfill our duties everyday to make you enjoy the harvest!



Zhonghui (Dalian) Irrigation Equipment Co.,
Ltd

Marketing Director: Ms. Shi

Email: office@zhirri.com

Mobile: 0086 13604258779/150940833390

Tel: 0086 411 8787 8791

Fax: 0086 411 8766 7102

Web: www.zhirri.com

Web: www.zhirri.en.alibaba.com