



**2022**

## PRODUCT CATALOG

Turkish Industry | International Quality | Modern Systems | Industrial Experience







# Contents

Modern Irrigation .....	2	Center Drive Motor(gear motor) ....	17
About the company .....	3	Center Tower .....	19
Pivot Irrigation .....	5	Sprinklers Types .....	20
AFKO Small Pivot Center .....	6	Intermediate Towers .....	21
AFKO Linear Irrigation Systems .....	9	Towers Features .....	22
AFKO Control Panel Options .....	12	Connections and Pipes Connecting	23
Tower boxes .....	15	Crops that can be grown .....	25
Collector Rings .....	15	Stages of installing the System .....	26
Gearboxes .....	16	Specialized services .....	27

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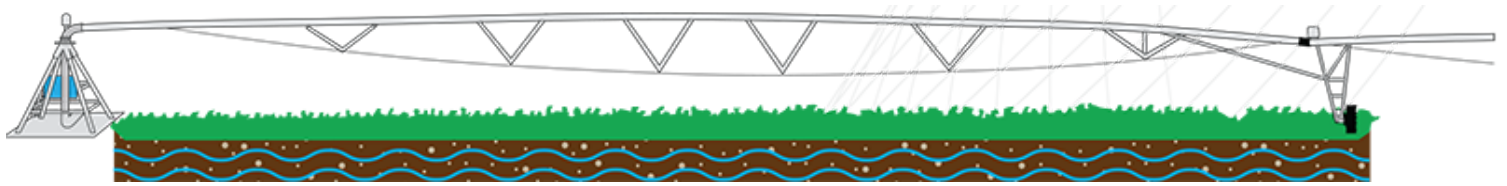




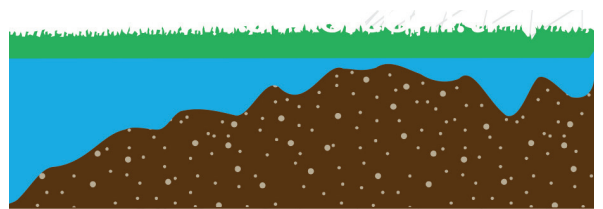


# Modern Irrigation Modern Agriculture

1. The center pivot irrigation system has proven its efficiency in the modern agricultural field during the last five decades until now.
2. The center pivot irrigation system is characterized by high efficiency and quality, in addition to its ability to save great resources and costs in irrigating agricultural lands in different harsh weather conditions and on all types of soils and agricultural lands.
3. The manufacture of the system adopts high-quality galvanized steel, which is resistant to rust, to increase the life span.
4. Irrigating the lands in a circular motion around a stable center in addition to the efficiency of irrigation even on sloping lands with a percentage of 15%.
5. Stable and symmetrical irrigation performance as it irrigates 90-95% of the total area of the field in proportion to the soil requirements.



The center pivot irrigation system distributes water to different types of lands in a homogeneous and accurate manner, which ensures that you reduce labor costs and achieve a quick payback return compared to methods of traditional irrigation methods. The water distribution is significantly superior compared to other methods of surface irrigation.

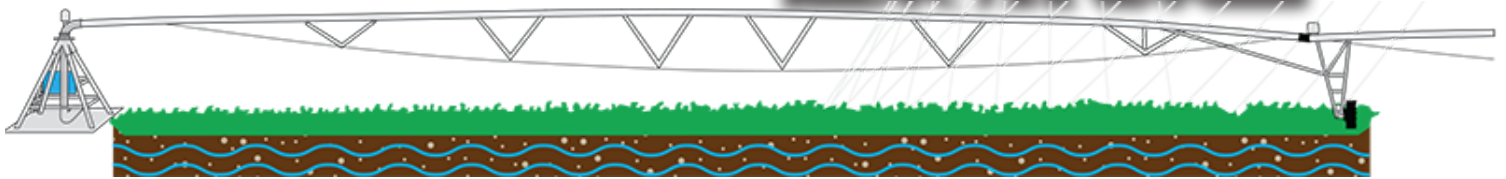




# About Us

In 1981, AFKO started producing agricultural equipment and accessories for agricultural machinery such as ploughs, seeders, combines, etc.

During the company's work and with its development, AFKO began to focus on irrigation systems of all kinds. In 2012, AFKO Metal was registered to produce center pivot irrigation systems in Ankara, the capital of the Republic of Turkey.



AFKO was established and gathered in its facility the highly qualified and experienced industrialists and engineers who numbered more than 150 experts and industrialists to provide its developed and best products in the labor market as it developed its products taking into consideration the highest international standards standards by relying on:

1. Its expertise and interest in keeping pace with the technical foundations in manufacturing by relying on modern technology.
2. To cooperate with the world's leading companies in this field, which are based on supplying pivotal irrigation producers of spare parts and complementary supplies.

(NELSON - SENNINGER - UMC - ICII)

In addition to the international quality certificates owned by Afco

In the production of center pivot irrigation systems (ISO - CE)

This is what made AFKO gain its position in the global markets for the production of pivot irrigation systems, as it had the largest share in expanding in the Arab and international markets (Sudan - Algeria - Iraq - Turkey - the United States of America - Serbia - Tajikistan - Romania - Ethiopia).



# Mission

Providing radical solutions in preserving the resources of investors during their works in the field of agriculture by providing the latest irrigation machines with the adoption of all international quality standards and competitive costs for the global market, taking into account the needs of farmers in the first place, where after-sales services are available through industrial, engineering and technical cadres With experience in engineering and implementing projects on the ground, and then training those in charge of operating the project and providing the investor with full information about the project management that he will implement, starting from the first foundation step until harvesting the product, through periodic visits to the project land and providing the most important observations regarding Agricultural production, in addition to an inventory of the deficiencies in the consumable parts in the project's stores, in addition to securing these parts at the lowest price in the local market.





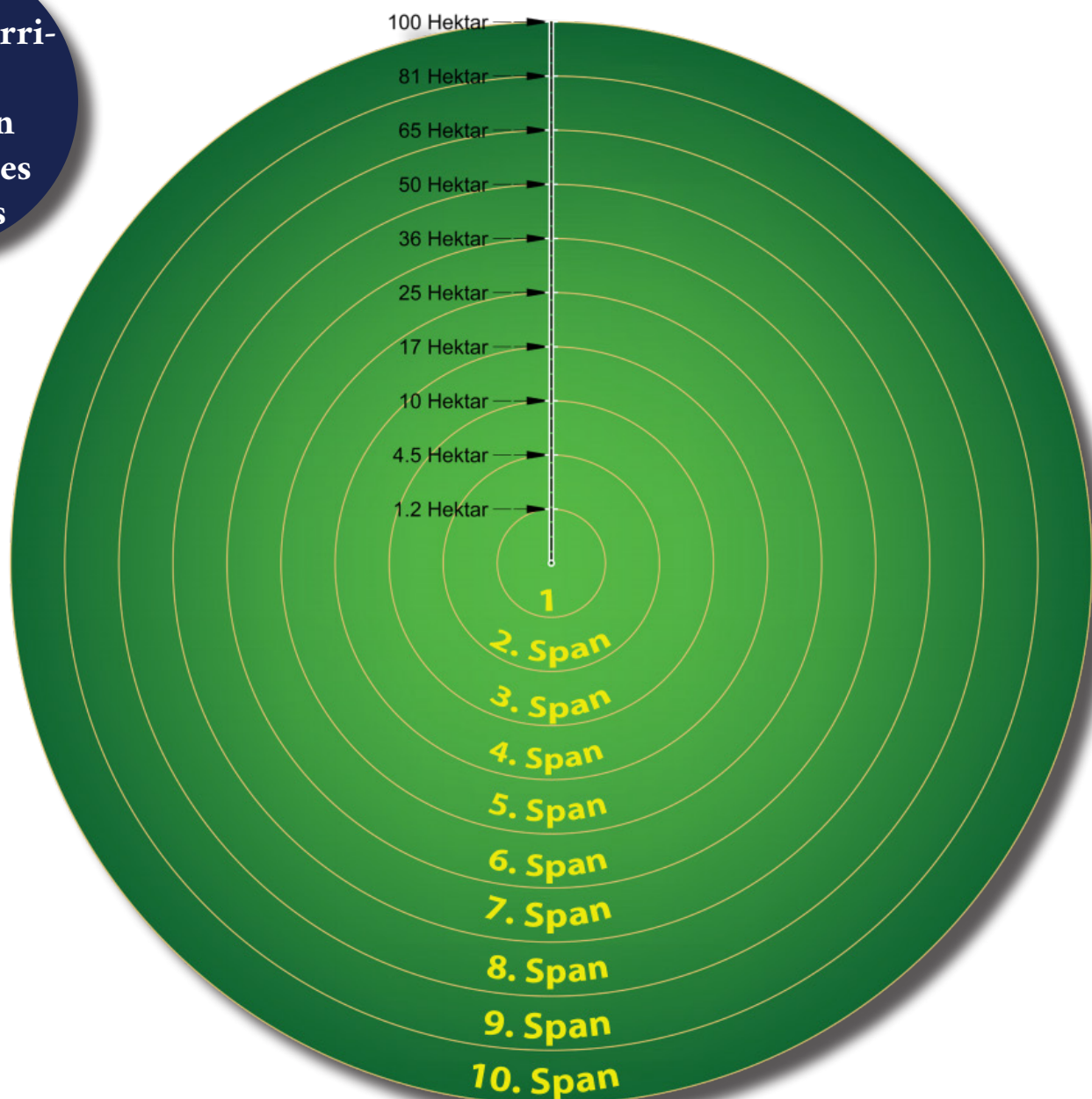
# AFKO Standard Pivot Irrigation System

The system consists of several interconnected dynamic metal towers that rotate in a 360-degree circular path around a stable central tower.

The connection point for the towers is a multi-directional hinge that allows the tower to be rotated up to 30 degrees allowing the system to be perfectly adapted to different rough farmland.

The center pivot system enables you to irrigate lands of all sizes, starting from 1 hectare per tower, up to 220 hectares for a spans with a length of fifteen towers, to gain the largest possible economic benefit.

capacity to irrigate  
more than  
220 hectares  
500 acres





# AFKO Standard System Features

Saving water resources by 35-50%.

Irrigation with greater efficiency and distribution of up to 95% of the land.

Optimum performance among modern and traditional irrigation systems.

A unified system for irrigation and fertilization of land.

Saving workers' costs in addition to ensuring the timeliness of irrigation practical and at the required speed.

The ideal solution in meeting the needs of farmers with different projects and requirements.

Speed in providing the best after-sales services in terms of maintenance and spare parts.

Maximum Field Size	220 hectares
Maximum Length	835 m
Maximum Tower's number	15 towers
Maximum Power Consumption	13.2 kW
input Diameter	8 inch/219 mm
Overhang Water Gun Capability	22 meters

## AFKO Small

## AFKO Small Advantages

Maximum Field Size	23 hectares
Maximum Length	275 meters
Maximum Tower's number	5 towers
Maximum Power Consumption	2.75 kW
input Diameter	140 mm 5 inch
Overhang Water Gun Capability	15 meters





# AFKO Pivot Center (SMALL)

The center pivot irrigation system (AFKO SMALL) is light in weight and flexible in movement.

Designed specifically for lands with few water resources, in addition to the systems direct dependence on alternative and renewable energy.



## AFKO SMALL features

Saving energy and water resource consumption up to 45-60%

Designed for lands with few water resources

Support faster harvest cycles for most crops

Uniform and accurate irrigation and fertilization system

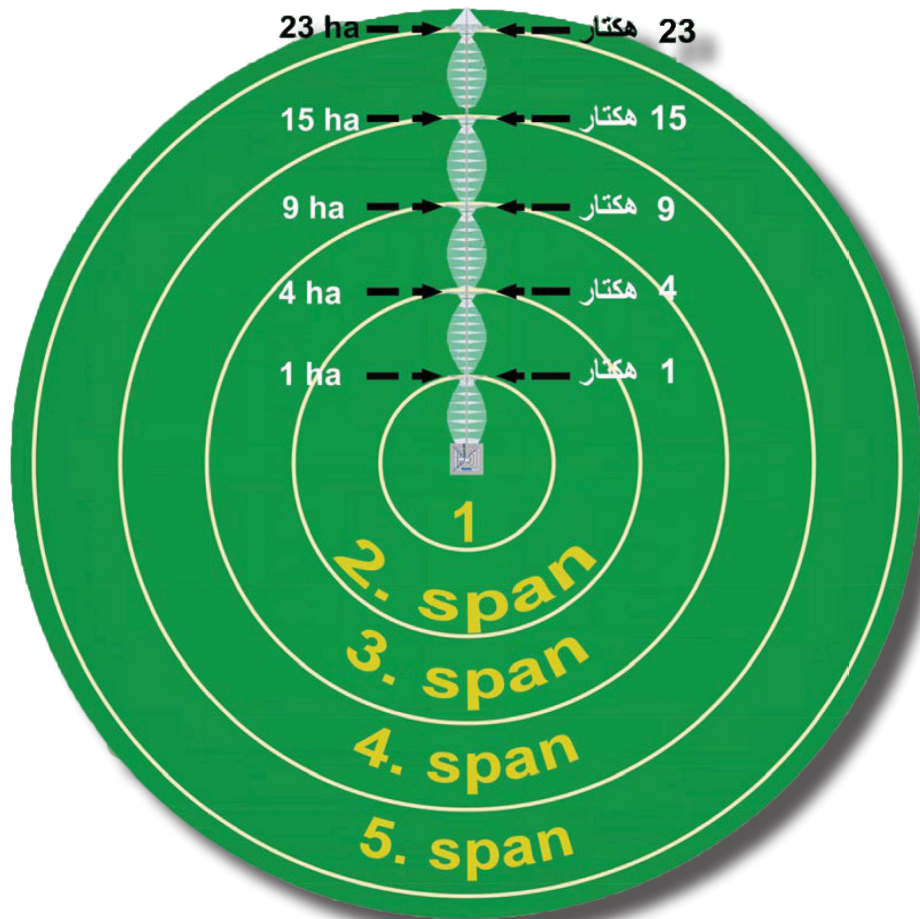
Saving workers' efforts and costs, in addition to providing time and faster productivity

The perfect solution for using alternative energies such as solar energy

Speed in providing the best after-sales services in terms of maintenance and spare parts







# Maximum Coverage

## AFKO Linear Irrigation System

AFKO Linear pivot is designed to ensure the task of irrigating the largest possible area of land with rectangular or longitudinal shapes





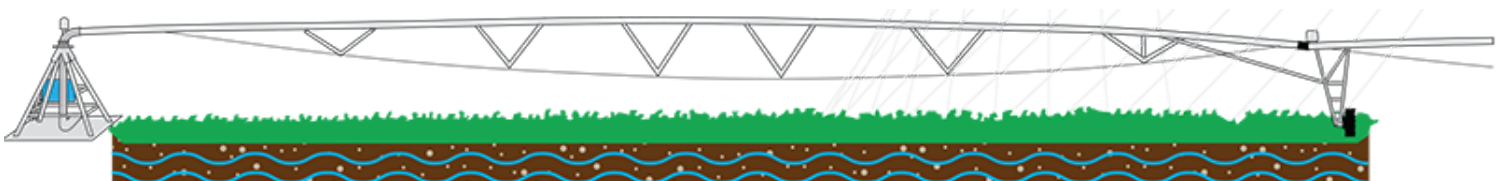
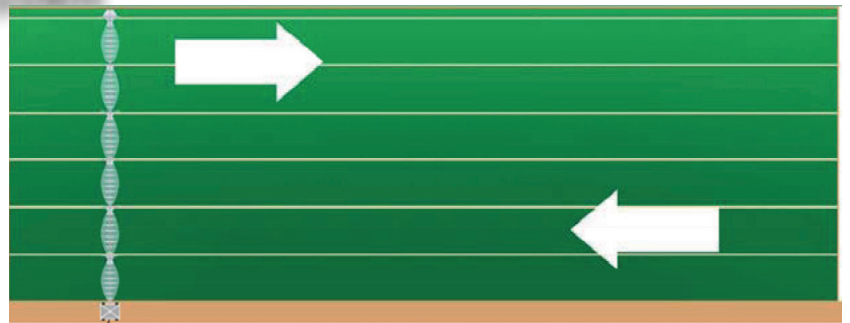
# Water feeding using the hose

Water feeding via a large diameter hose - as needed - that is installed in the main entrance  
Support the use of two-wheel or four-wheel system according to the land area  
Water inlets and hoses with multiple diameters starting from 5 to 10 inches, depending on the area of the land and the type of crop



## Advantages of AFKO Linear pivot System

Maximum Field Size	135 hectares
Maximum Length	451 meters
Maximum distance traveled	3000 meters
Maximum Tower's number	8 towers
Overhang Water Gun Capability	20 meters



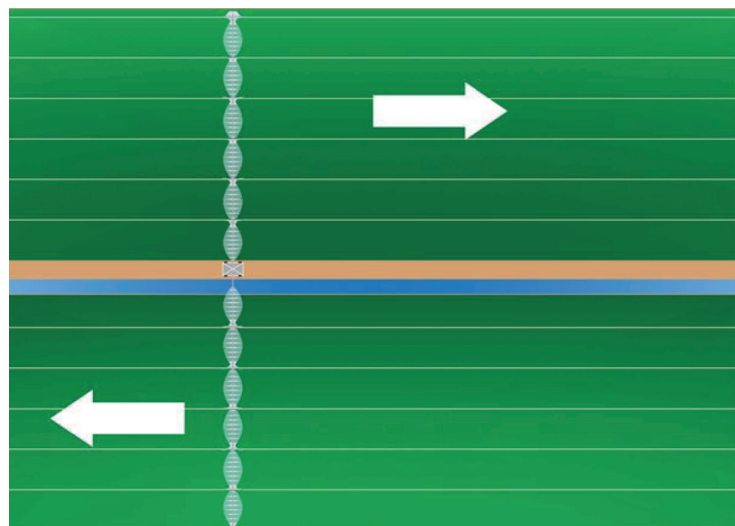


# Water feeding via water canal

The system is fed with water via channel adjacent to the ground or in the middle of it. It is preferable that the channel be made of reinforced concrete or surrounded by plastic molds with very light inclinations. The process of selecting the filter designated for drawing water depends on the type of implemented channel.

## Advantages of AFKO Linear pivot System

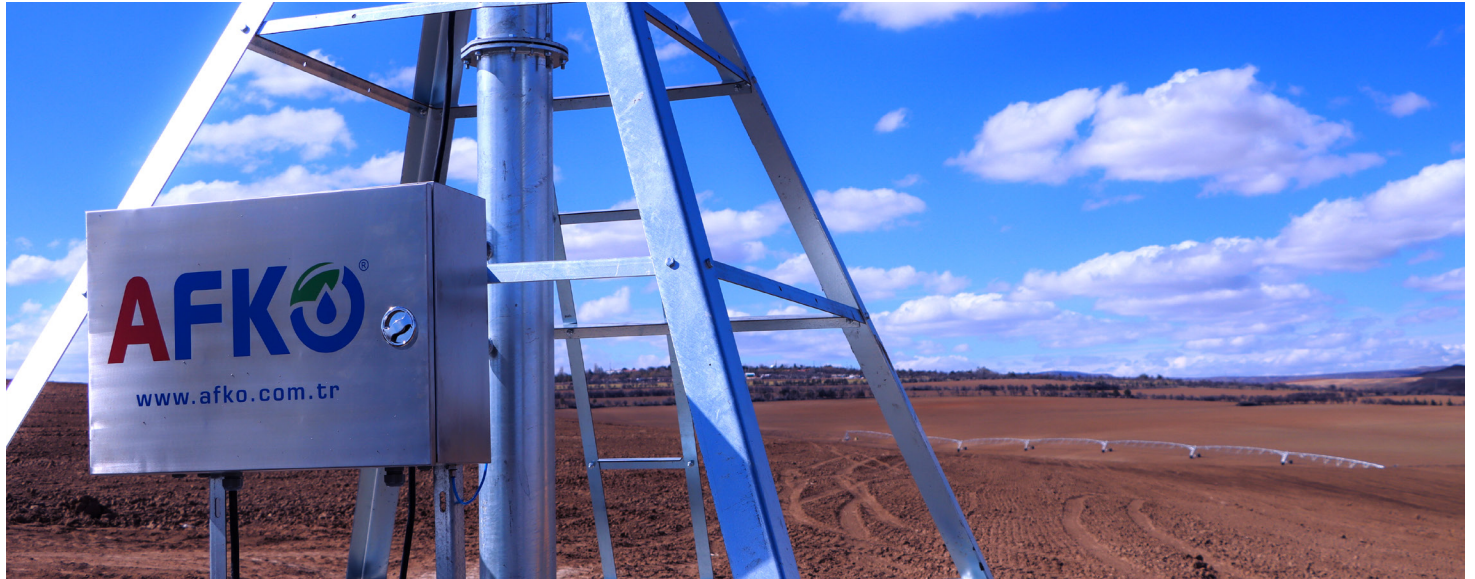
Maximum Field Size	135 hectares
Maximum Length	451 meters
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# AFKO Control Panels

control Panels have specially developed control capabilities to give the full experience to costumers, and they are completely designed to face all harsh weather conditions including high humidity, in addition to compatible with the requirements of flowing voltage



## Panels Types

Basic Control Panels.

Stainless Steel Weather resistant Control Panels.

Digital Touch Screen Control Panels.

Remote control feature via a computer or mobile phone to increase the speed of control and monitoring, all at the click of a button





# AFKO Control Panel Options

Adjust the movement of the irrigation devices' motors (towers) in the right and left directions as needed.  
Control the timing of the start and stop according to the desired time in conjunction with the amount of water to be irrigated for the lands.

Safety system to protect the towers and organize their work in a coordinated manner through the sensors in the tower boxes .

Controlling the operation work of the fertilizer pump in addition to the mixer.

Turning off and running the center pivot irrigation device according to the water pressure.

Controlling the degree of rotation of the center pivot irrigation system via sensors located in the penultimate tower.

Adjusting the ampere according to the number of towers in the center pivot system or according to the power of the motors.





# Digital system control panel

remote control feature.

display the distance traveled by the center pivot irrigation device.

Controlling the rotational phases of the center pivot irrigation device and the number of total cycles





# AFKO® TOWER BOX

Tower Box consists of a white thermoplastic molten metal with a heavy wall UV-fixed with galvanized steel base. In addition to a slant and an alloy steel that is calibrated upon installation. Moisture-resistant and flexible during movement in all directions. Solid base and large alloy screw operate. On enhancing the equilibrium properties of the device to reduce stress on the chassis.

The function of the tower box: organize and manage the successive movement of the towers along the length of the Pivot to keep it straight.



Tower Box



# COLLECTOR RINGS

It is placed on top of the central tower (center) and is used to transmit continuous electrical energy and the signal voltage received from the main control panel to feed the tower boxes (Tower Box) and the motors in the axle, protected by a water-tight protective cover with a water-tight sealant and added to it with a sun-resistant material, and equipped with a standard electrical conduit with Stainless steel to ensure years of trouble-free service.





# AFKO® GEARBOX

A Turkish made gearbox, polished from one of the best types of Turkish metals known globally, as it occupies the first positions in the world in the field of irrigation industry. It is durable and bears hard work. It has been manufactured and tested by the efforts of the best experts to match the torque required to operate the sprinkler according to the composition of the soil, wheels, And the types as below:

The 50:1 gearbox has been the industry standard used in many center pivot and side/linear irrigation systems globally for decades.

The gearbox has a 52:1 ratio, a 2.25-diameter extended output shaft, large insert bearings, seals and improved gear materials allowing for increased load capacity, reduced gear wear and lower operating temperatures.



## Gearbox Advantages

Max torque (8475 Nm)

Double inlet, helical gear reinforced with heat pressure  
2-1/4» outlet shaft

Double inlet and outlet plugs

Large inlet bearings inside reinforced chamber Stainless steel chamber

The gearbox is used to connect the engine and the frame with the possibility of adjusting the rotational speed depending on the speed required to rotate the Pivot Tower.





# AFKO® CENTER DRIVE (Power Saver Motors)

AFKO® CENTER DRIVE  
(Power Saver Motors)

The AFKO power saver Motors is available with a 3-phase electric motor 460/380 VAC, 60/50 Hz.  
We offer multi-speed reducer gearboxes that use 95 per-cent efficient helical drive gears to transmit power to the final drive gearbox.

## Motors Ratios

	20:1	25:1	30:1	40:1	50:1	60:1
Output RPM	86	67	57	44	35	29
Motor RPM at Full Load	1745	1745	1745	1745	1745	1745
Nameplate HP	1.5	1.5	1.5	0.75	0.75	0.75
Torque In.-lbs.	1100	1350	1625	1100	1350	1625
Rated AMPS	2.4	2.4	2.4	1.4	1.4	1.4
Service Factor (SF)	1.0	1.0	1.0	1.3	1.3	1.3
Continuous HP Rating (@ Service Factor)	1.5	1.5	1.5	1.0	1.0	1.0
Continuous Torque Rating In.-lbs. (@ Ser-vice Factor)	1100	1350	1625	1400	1760	2100

## Advantages of AFKO® power Saving Motors

- Splash guard for added moisture protection when the spray nozzles are located under the gear motor.
- Aluminum stator housing with fins for cooler operating temperature.
- All aluminum gearboxes for cooler operation, longer life, and increased resistance to corrosion.
- All gears are heat-fused.
- High strength steel arm for long life and greater reliability.
- Able to deliver irrigation efficiency of 95%.
- Stainless junction box cover.
- Class F insulation insulated to ensure quality.





# AFKO® COUPLERS

AFKO couplings feature high-quality durability that absorbs driveline stress and shock and a self-aligning design, extending the life of the gearbox.

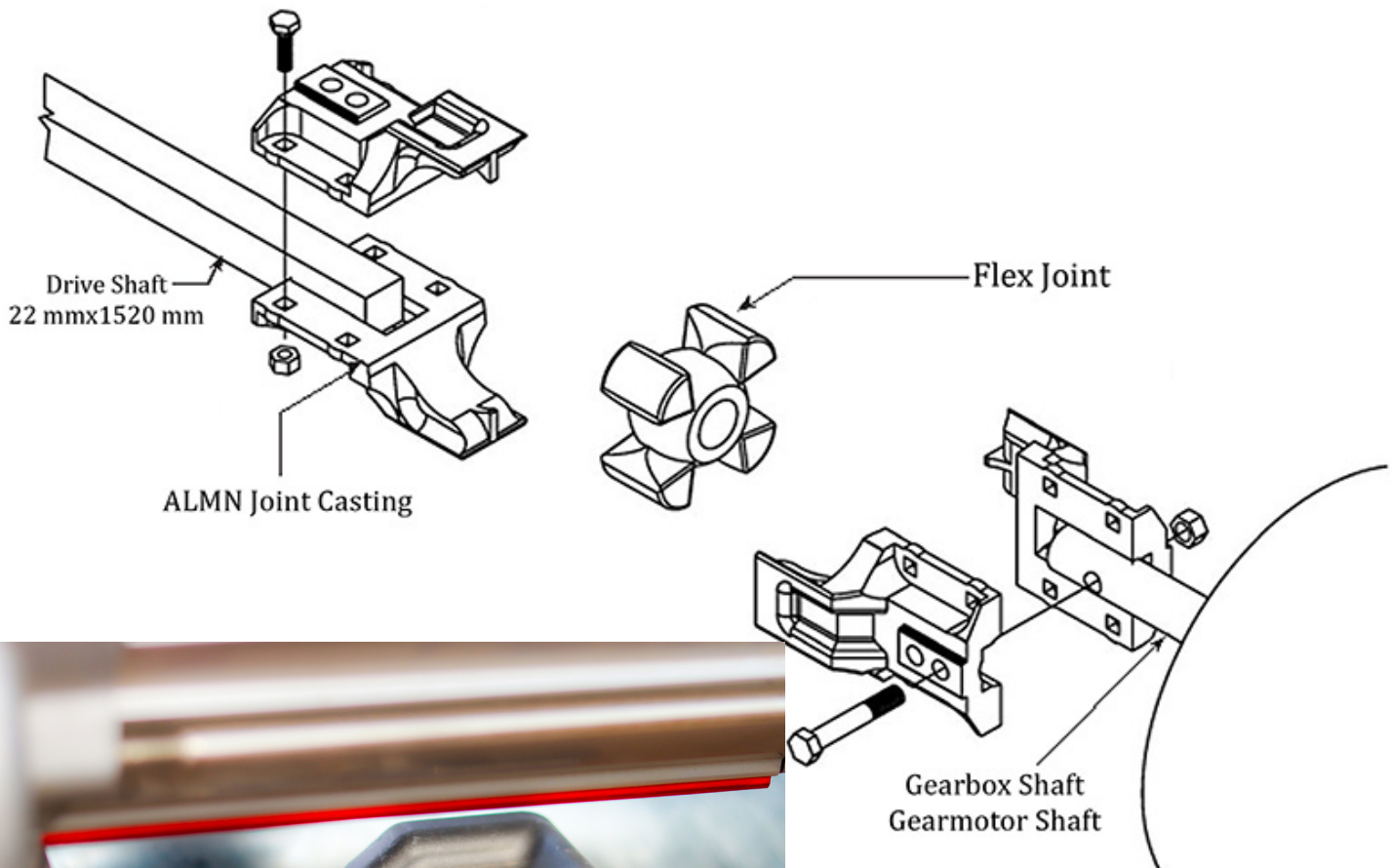
Made of heat-treated aluminum body and polyurethane coupler to add double the strength, the joints are non-rusting, chemical/UV resistant.

It is specially formulated for use under harsh operating conditions, and does not require lubrication.

Cloverleaf couplers feature a high quality insert that absorbs drive-line stress and shock, extending gear life.



## COPLING FLEX U-JOINT





# AGRICULTURE WHEELS

AFKO wheels are specially designed for irrigation and made of rubber resistant to chemical fertilizers, Rims are made of galvanized iron resistant to rust, with valve stem.

AFKO wheels are available TUBELESS and Tube-Type

Suitable for sizes:

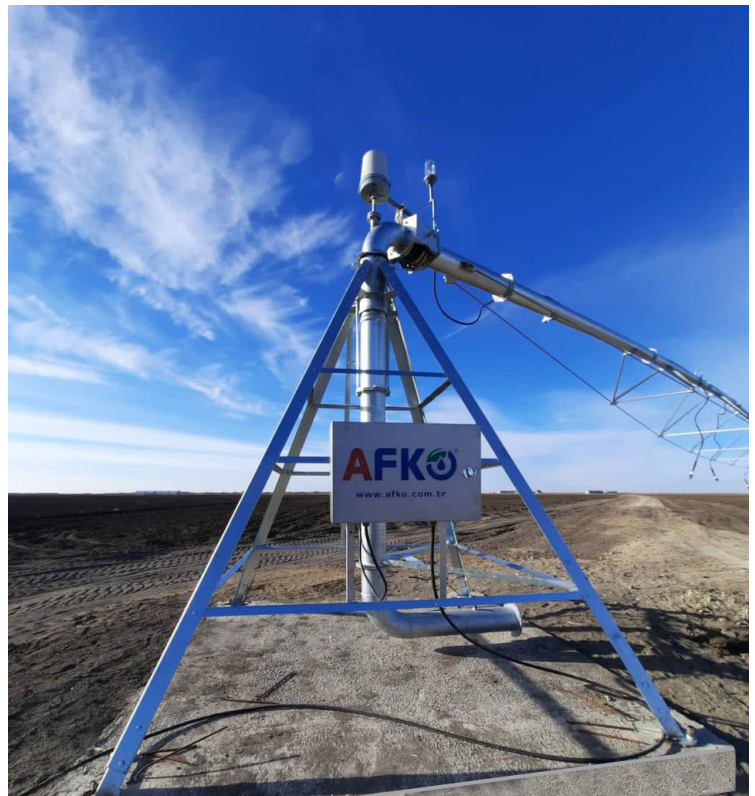


11.2 x 10 x 24"  
12.4 x 11 x 24"  
14.9 x 10 x 24"  
14.9 x 12 x 24"  
14.9 x 13 x 24"  
16.9 x 14 x 24"

***The ideal solution  
For better investment and more  
Productive fields***

## ***Central Tower***

AFKO designed the pivot point with carefully selected standard dimensions to suit the various foundations available to the user while maintaining the durability of the materials used in the manufacture to ensure resistance to weather conditions and various rough terrains to ensure the prolongation of the life of the central tower. More cross brace and cross supports were added to ensure doubled support to the spans with a length of up to 66.35 metres, in addition to the central tower is available with a replaceable and maintainable elbow pipe with a sealant (silicone) to prevent any leakage.





# Sprinklers

Our goal is to deliver water to your land in a manner commensurate with its characteristics. From this point of view, we have provided the latest types of sprinklers and final irrigation guns, in cooperation with the best companies specialized in this field to ensure that you get a sprayer that suits all your needs.

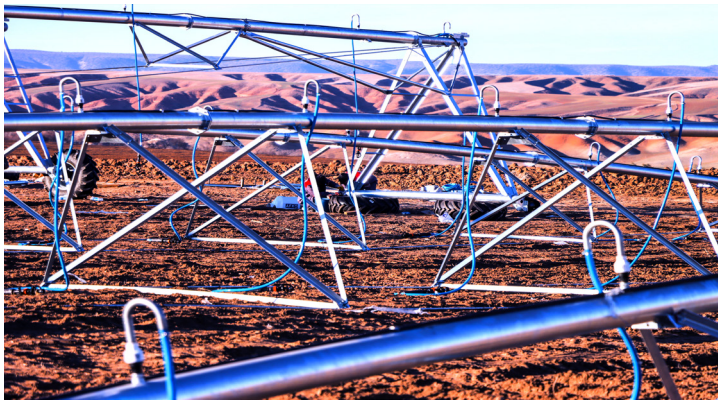




# The most Durable and most Economical Irrigation System

## Mobile Tower

At AFKO, we worked on engineering and designing the best structure for a strong tower made specially for pivot irrigation. We provided a tower structure supported by additional cross-supports and high-quality tensioners (tie wires) attached to the tower, in addition to lower braces in the center of gravity, all of this to ensure a coherent tower that is resistant to tensile and rotational forces in Badlands and soil compositions of all kinds to achieve a longer life span and a superior initial investment.



## Coupling and Joints

These joints connect two spans to each other where the pipes are connected by a multi directional flexible joint that allows movement in several directions allowing the spans to rotate up to 30 degrees. The presence of these joints makes the sprinkler ideal for rough and sloping terrains.





# Tower Advantages



Simple and smooth design adopts the principle of quick assembly.

The structure of the span is inspired and designed on the principle of the arch lattice bridge, which supports ensuring the stability of the body's centering on the ground and reducing the minimum amount of structure distortion.

The span consists of a set of angles holding and supporting the metal pipes connected.

Brackets and tubes are cast from rust-resistant galvanized iron to extend life.

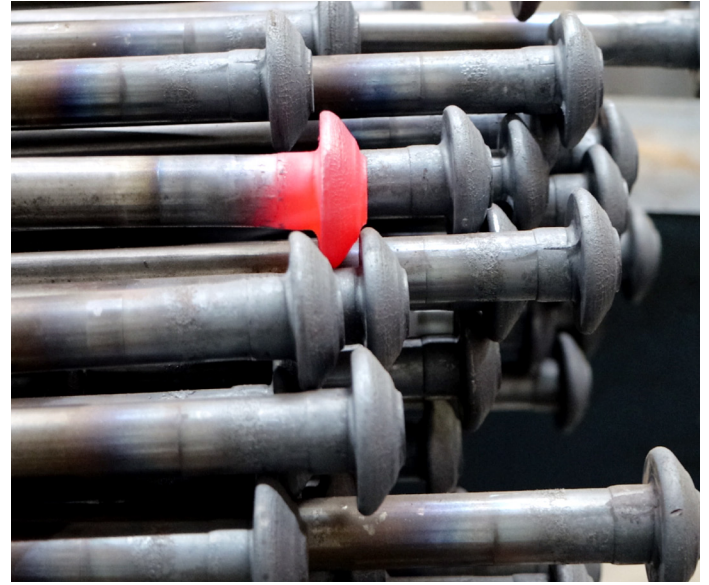




# TRUSS-SOCKET

Connecting Truss rods to diagonal and spreader angles , This Socket allows adding double stabilization performance to the span while maintaining the safest way of working by providing ultimate flexibility in rough terrains.

Perfect design that provides clamping force by permanent contact at all points of attraction or clamping force.



## TRUSS GUSSET

This gusset distributed loads evenly over the steel truss apex to achieve balance and maximum resistance for the pivot system, as the gusset is connected and held together by a galvanized stainless steel ties.





# First Tower Connection

Its mission is to ensure the flexible connection process between the center point and the first tower. The connection is made by means of steel miles located in the joint in addition to a flexible rubber sealing joint made of rubber material (caoutchouc) reinforced with a fiber net.

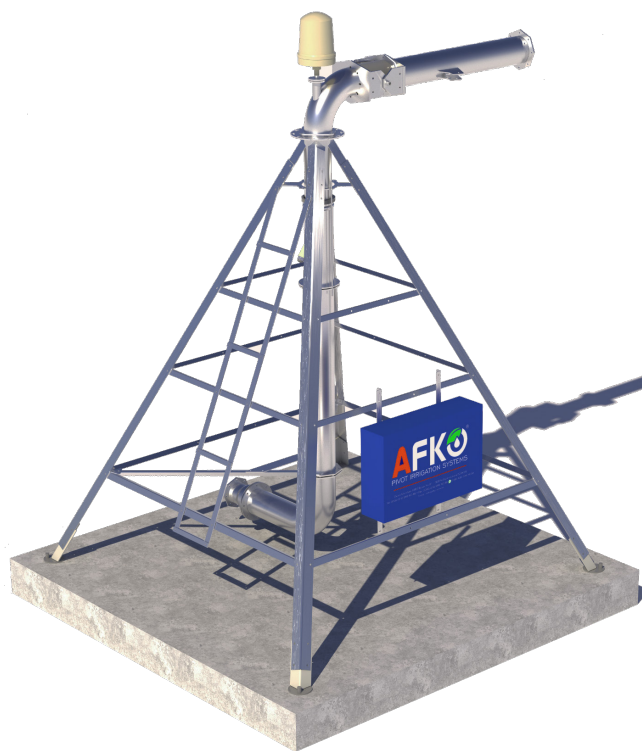
This joint pipe has been specifically designed to provide flexibility in the spans to contribute to greater additional balance on sloping terrains.

## overhang pipe

overhang pipe's design is done according to the nature of the land and its area, starting from 0.5 meters up to 24 meters.

It has high stability as a result of its connection to vertical and horizontal tensioners (iron wires).

pipes of the overhang are designed of different diameters (depending on the project).





# Crops that can be cultivated

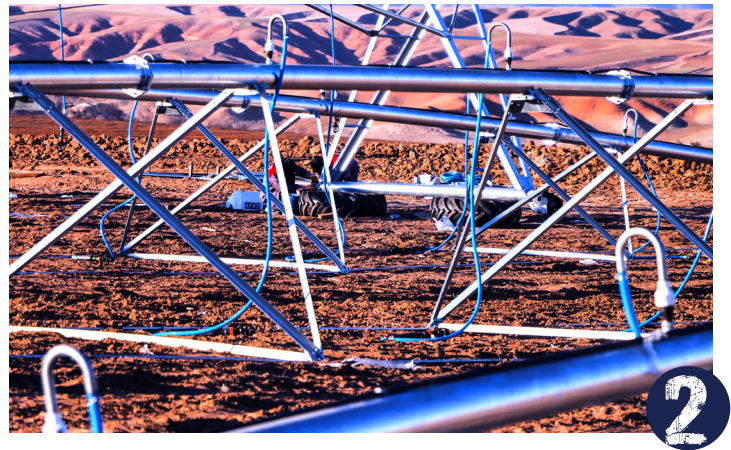
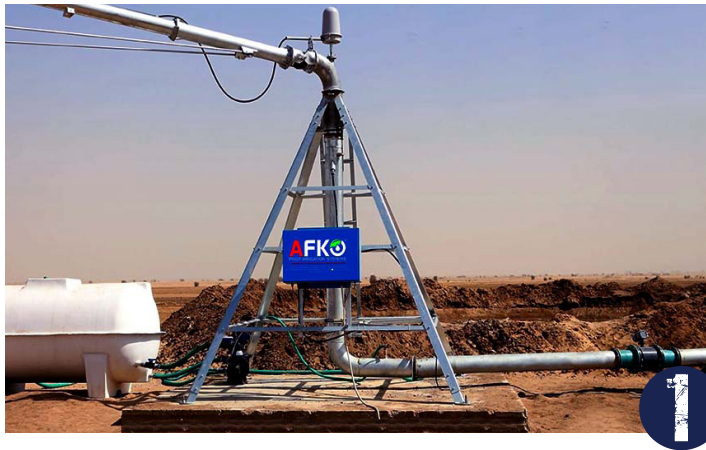


Grains of all kinds (corn, wheat, barley)  
sugar beet, cotton  
Citrus fruits and dwarf trees  
Watermelon, pineapple, and similar crops  
Onions and potatoes  
Legumes of various kinds  
And many other plants and crops.





# Pivot Irrigation System Installation Stages





# SPECIALIZED SERVICES

## Engineering Designs (Architectural & Agricultural)

AFKO provides its customers with all project planning engineering services to be implemented, which contributes to ensuring the best results required from the project on both of the economic and production levels, in addition to achieving the Maximum benefits of the cultivated land, which contributes to reducing the cost of the initial investment to the lowest level.



## Project Management And Organization

We supervise the project for a period of time (85 days), especially on topics such as germination and water flow and - if it is necessary- to quickly engage in the project management, which allowing us achieve the highest success rate in germination.

We provide technical advice to project-based workers and take notes on the pivot system from a technical point of view, in addition to advice on planting in terms of germination and irrigation.

Direct communication and exchange of beneficial information with investors to get more prolific crops and get the most successful methods in agricultural



# Implementation of Projects and Rapid Logistical Support

In the field of irrigated agricultural engineering, we provide our after-sales services through technicians with experience in installation and operation.

In addition to training those in charge of operating the project, and we provide the investor with information about the project which he will implement, starting from the first foundation step until harvesting the cultivated crops, by doing periodic visits to the project's land and giving notes regarding agricultural production.

Counting and inventorying the deficiencies of the consumabled parts in the project stores and providing these deficiencies parts for the project at the lowest price available in the local market.







*Note: Due to AFKO's adoption of the policy of development and modernization of its products, certain changes may occur in machines, equipment, options, prices, etc. after printing and publishing this catalog. Please contact AFKO Headquarter to get the latest developments updates*





**PIVOT IRRIGATION SYSTEMS**

CE ISO 9001:2015

TS EN ISI IEC 17021

AB – 00090 – YS

*“Hand by Hand to  
build Tomorrows Land,,*

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