

# ***irrifrance***

## The optimal solution

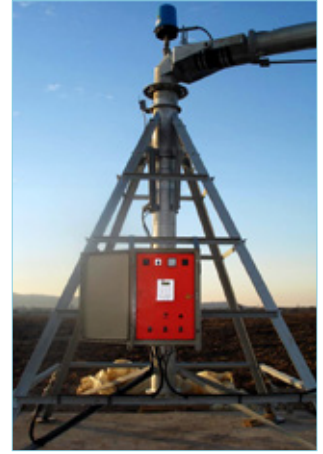
Pivots & Lateral Moves



[www.irrifrance.com](http://www.irrifrance.com)

# THE PIVOT

## Central Unit



- Height of the central unit : 3,90 m.
- Tie truss angle : 40 x 40 x 5 (ø 114, ø 127, ø 141)  
50 x 50 x 5 (ø 127, ø 141, ø 168, ø 193, ø 245)
- Available inlet for fertilization on the low elbow (tapped and 1").
- Waterproof (tight) polyester main control panel reinforced fiber-glass.
- Double door to prevent condensation, complies with european norms.
- Structure legs in 70 x 70 x 7 (ø 114), 80 x 80 x 8 (ø 127, ø 141) and 100 x 100 x 10 (ø 168, ø 193, ø 245).

Pivot Diameter	Feeding Pipe Diameter	Maximum Output*
ø 114	UC ø 4"	108 m <sup>3</sup> /h
ø 127	UC ø 5"	145 m <sup>3</sup> /h
ø 141	UC ø 6"	175 m <sup>3</sup> /h
ø 168	UC ø 8"	255 m <sup>3</sup> /h
ø 193	UC ø 10"	345 m <sup>3</sup> /h
ø 245	UC ø 10"	555 m <sup>3</sup> /h

\* recommended for 3,5 m/s

## Central Unit's Equipments



### COLLECTOR

The waterproof collector is positionned on the top of the central unit and is easily serviced.

With 12 tracks, the collector enables a total connexion between the main control panel and mobile spans.

### END GUN AND OVERHANG PILOT SYSTEM

Water control system is able to start or stop the irrigation on the overhang sprinklers and/or the end gun.

### AUTOMATIC WATER STOPVALVE

Hydraulic system to stop water slowly at the end of irrigation time.

Avoiding water hammer or auto shut down safety procedure matching with all automatic drives. Available in 3", 4", 5", 6" or 8".





# THE PIVOT

## Control Panel



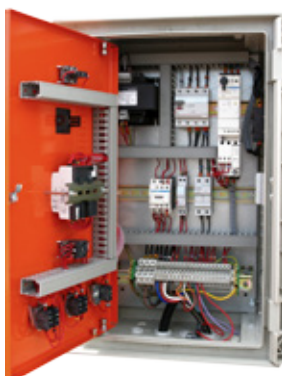
PANEL L TYPE



ELECTRONIC PANEL L TYPE



PIVOCONTROL / PIVODOSEUR PANEL



OPENED PANEL

### Panel L Type

- Waterproof (tight) polyester main control panel reinforced fiberglass
- Outside dimension 645 x 435 x 250
- Degree of protection IP 55 (Manufacture Telemecanique)
- Double door with painted sheet polyurethane
- On / Off switch                      - Voltage Indicator                      - Time (hour) meter
- Timer switch with value displayed in %
- With water / without water running switch
- Front / Back / Auto running switch (Pivot sector)
- Safety indicator and push-button to remove security process

### Electronic Panel L Type

This electronic control panel is compatible with all pivots Irrifrance. In a streamlined design, the number of internal components is reduced. It allows:

- Direct management of the irrigation dose,
- Set-up of different doses in forward and reverse use,
- To program a time delay for starting,
- To program a time delay in both forward and reverse use,
- To count the number of hours of run and irrigation use.

### Panel S Type

- Waterproof (tight) polyester main control panel reinforced fiberglass
- Outside dimension 750 x 535 x 300
- Degree of protection IP 55 (Manufacture Telemecanique)
- Double door with painted sheet polyurethane
- On / Off switch                      - Voltmeter                      - Selector switch (Legrand)
- Timer switch with value displayed in %
- With water / without water running switch
- Front / Back / Auto running switch (Pivot sector)
- Safety indicator and push-button to remove security process
- Main disconnect switch of main control panel
- Safety relays                      - Pressure switch relay

### Pivocontrol main control panel

The main control panel contains an electronic panel permitting an expert advanced operating of the machine. It permits in standard :

- Direct programming of irrigated sectors either in application, or in percentage, or in duration.
- Complete circle irrigation or until twenty sectors with different applications.
- Management multicycles or mono
- The reverse delay                      - Delayed starts management
- The arrival time display for each sector
- In option : management by GSM or remote

### Pivodoseur 2 main control panel

Possibilities of same programming as pivocontrol with corner informations given by the absolute coder fitted in series in the collector 14 rings allowing the management until 5 options.

This absolute coder gives span location with precision of 0,1 degree.

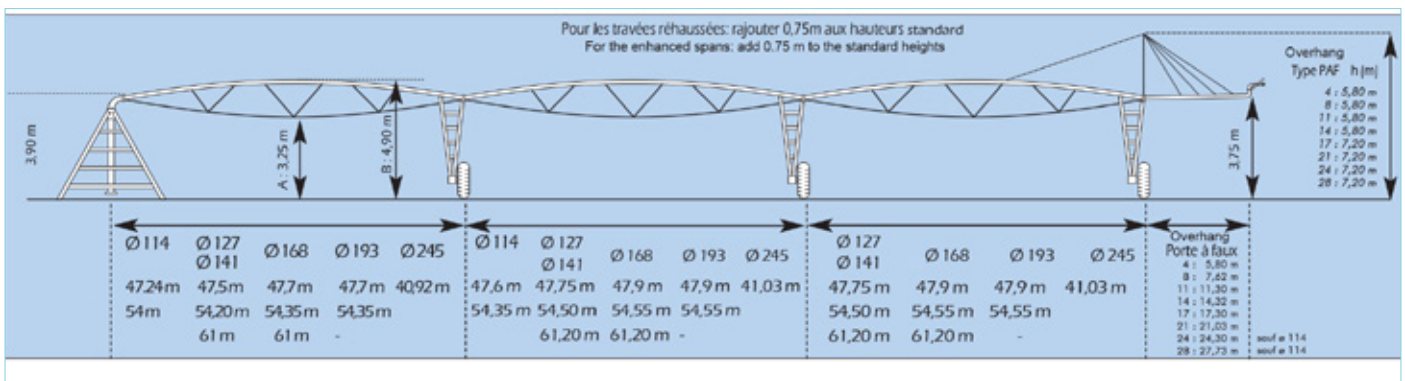
Electric cable multi-conductor 11 wires-only

2 availables for 2 options.



# THE PIVOT

## VXP Structure



Irrifrance has chosen such a conception for its strenght. The V angle structure enables an uniform distribution of the charge all along the span.

All parts of the structure such as pipe, angles, frame stabilizers and base beam are hot galvanized.

The new conception of the truss rod with forged extremity guarantees a very easy installation, and high strenght.



### Antitheft prevention kit of electric cables

To prevent thefts of electrical cables of power supply for motors. Irrifrance developed a new protection to secure your global installation. Contact Irrifrance for further information.





# THE PIVOT

## VXP Structure



## VXP Structure's Equipments

### COUPLING

- A «cardan» type U joint is used as a connection between 2 spans. Oversized, it is able to absorb irregularities of the ground.
- Dual-lips Gasket boot included between two half aluminium couplings. Assuring an integral path of the waterflow, an easy gasket dismantling and a protection against UV.



COUPLING



WHEEL GEAR BOXES UMC 740



GEAR MOTOR UMC



WHEEL

### TOWER ELECTRIC BOX

An articulated connecting stainless steel rod with cam and safety switch ensures a perfect alignment, and a thermal and magnetic protection controlling electric motors according to European safety rules.

### TRANSMISSION SHAFTS

Well protected, they are purposely designed to provide the best connection between the gear motor and the wheel gearboxes. Their elasticity is able to absorb shocks when starting and as a consequence doubles life of the wheelgearboxes.

### GEAR MOTOR UMC *Central cover processed with anti-corrosion*

- Ratio of 1/40 - Motor size 3/4 HP - 0,55 kw: the high operational efficiency reduces power requirements of the equipment.

### WHEEL GEAR BOXES UMC 740

Heavy duty worm wheel gearboxes, oversized 2" 1/4 axle with taper roller bearings. High strength cast iron bull gear for long life, hardened stress proof worm gear. Expansion chamber to allow oil expansion.

### WHEELS

With galvanized rim and valve shield can fit either :

12,4 x 11 x 24 or 14,9 x 13 x 24

and in option for wheels :

11,2 x 10 x 24 and 12,4 x 11 x 38 and 16,9 x 14 x 24

or other demand sizes.



# THE PIVOT

## IMS : Irrigation Management System



- Managing irrigation from pivot control panel.
- Managing irrigation from computer (software).
- Monitoring and control (start, stop, reverse etc.) of up to 99 central pivots.
- Remote overview of the pivots on a map with multiples views user interface.
- Remote control of irrigation parameters (speed, rate, etc...).
- Management of up to 20 sectors with different schemes of irrigation (rate, fertilizers application, end gun, start/stop, overhand start/stop, etc...).
- Text message notifications for critical status changes.

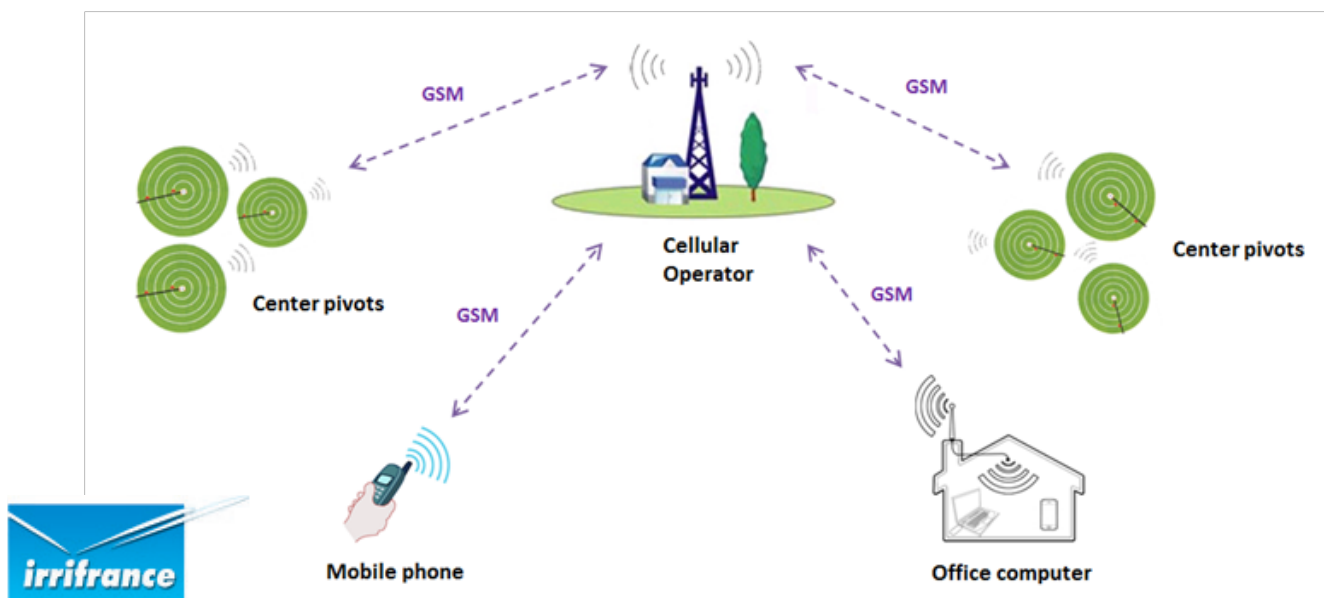


This system is based on data transfer via GSM network. When Radio frequencies are strictly controlled especially in military areas, GSM network is easily accessible through national operators with relatively good coverage.

The link between central pivot and computer is bi-directional: it allows monitoring the pivot and setting-up irrigation programs remotely with full access to all functions of the control panel.

The user is informed of the remaining time and arrival time for the ongoing sector or for the full ongoing irrigation program. Incidents and defaults are also displayed of the software (pressure drop, electrical defaults...).

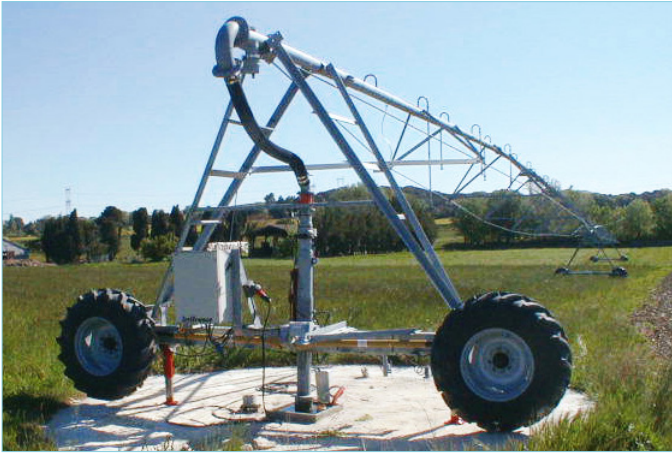
The technology also allows text message notification (SMS) directly from the pivot when a default or incident occurs. IMS technology requires PIVOCONTROL panel on the pivot, in which is plugged an electronic board connected to a GSM module.





# THE PIVOT

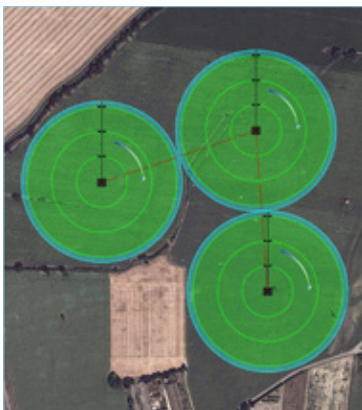
## Mobile Pivots



THE SPEEDY MULTICENTRE



TOWABLE PIVOT ON WHEELS



### The Speedy Multicentre

A technical solution to optimize your Irrifrance Pivot.

It irrigates like a centre pivot but moves from one position to the next (without tractor) like a lateral move, conveniently driven by an electric guidance box. The central unit of the multicentre is supported by 2 swing-out wheels which enable easy and safe frequent moves.

This machine is easy to adapt to different field configurations and sizes as well as to different crop growing techniques.

### Towable Pivot

This system which enables the pivot to be towed lengthwise is particularly relevant for plot watering in the rotation plan of farming.

This concept results with the irrigation of two or more fields.

The movement of the machine from one to the next position requires a tractor after the user has turned the wheels of the spans in position to be towed.

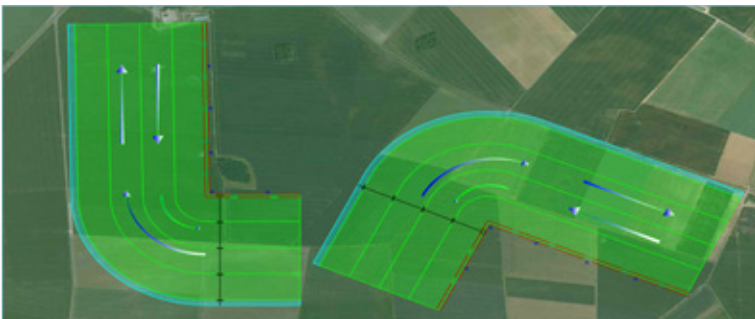
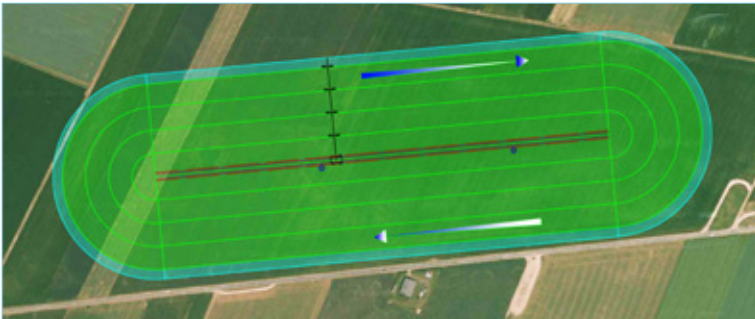
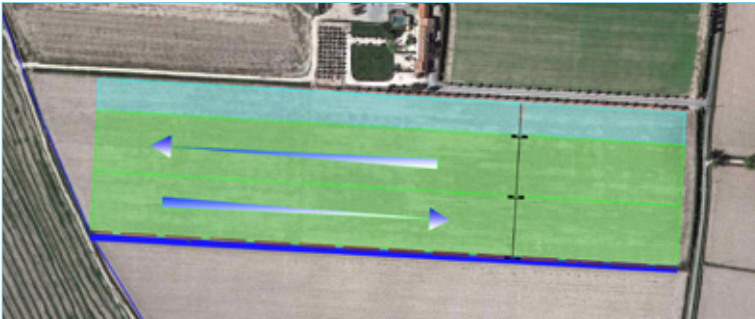
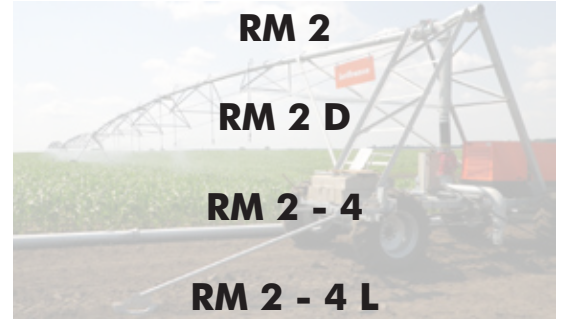
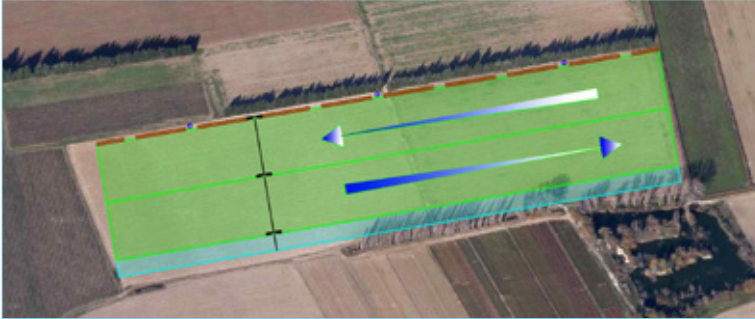


TOWABLE PIVOT ON SKIS



# THE LATERAL MOVE

## Irrifrance Lateral Moves





# THE LATERAL MOVE

RM 2



## CART CONTAINING

- 1 axle with 1 UMC gear-motor + 2 wheel gearboxes UMC.
- 2 wheels 14,9 x 13 x 24
- 1 pulling system of PE hose and power feeding cable.
- 1 hydraulic feeding with swivelling elbow (no necessary operating at inversion).
- 1 stop system at the end of the plot and automatic reverse.
- 1 main control panel.



RM 2 - 4



## CART CONTAINING

- 1 axle with 1 UMC gear-motor + 2 wheel gearboxes UMC.
- 4 wheels 14,9 x 13 x 24 fitted on articulated system to increase the ground sticking
- Possible hydraulic feeding by both sides of axle.
- Liquid filling (ballisting) increased by the water volume set in the axle.
- 1 stop system at the end of the plot and automatic reverse.
- 1 main control panel.



# THE LATERAL MOVE

## RM 2 - 4 L



### CART CONTAINING

- 1 axle with 2 UMC gear-motor + 4 wheel gearboxes UMC.
- 4 wheels 14,9 x 13 x 24 fitted on articulated system to increase the ground sticking
- 1 large axle allowing the installation of the generator and diesel fuel or fertilizer tank.
- 1 double hydraulic feeding of the spans to allow their installation on each side of the drive unit.
- 1 hydraulic feeding with swivelling elbow (no necessary operating at inversion).
- 1 stop system at the end of the plot and automatical reverse.
- 1 main control panel.

## RM 2 - 4 PL



### CART CONTAINING

- 1 axle with 2 UMC gear-motor + 4 wheel gearboxes UMC.
- 4 wheels 14,9 x 13 x 24 fitted on articulated system to increase the ground sticking.
- 1 mixed generator (alternator + diesel fuel motor + pump) intended to electrical and hydraulic feeding.
- 1 tank storage for diesel fuel supply with capacity on request.
- 1 articulated pumping arm intended to feed spans by sucked-in water in channels.
- 1 lifting of pumping arm thanks to a manual winch to facilitate strainer's handling and cleaning
- 1 automatical adjustment to adapt the height of strainer according to the water level changings.
- 1 electrical primer pump (for the pipes feeding before the pump starting).
- 1 manual declutching of the pump to operate lateral move without water.
- 1 double hydraulic feeding of the spans to allow their installation on each side of the drive unit.
- 1 stop system at the end of the plot and automatical reverse.
- 1 main control panel





# THE LATERAL MOVE

## RM 4 VE



### CART CONTAINING

- 2 half axles (stub axle) with 2 gear-motors UMC + 4 gearboxes UMC.
- 2 half axles with 4 gear-motors UMC.
- 4 wheels 14,9 x 13 x 24
- 1 swivelling head.
- 1 hydraulic feeding with swivelling elbow (no necessary operating at inversion).
- 1 main control panel.

## RM 4 L



### CART CONTAINING

- 2 half axles (stub axle) with 2 gear-motors UMC.
- 2 half axles with 4 gear-motors UMC + 4 gearboxes UMC.
- 4 wheels 14,9 x 13 x 24
- 1 swivelling head.
- 1 hydraulic feeding with swivelling elbow (no necessary operating at inversion).
- 1 main control panel.

# THE LATERAL MOVE

## RM 4 T



### CART CONTAINING

#### *Swivel Model*

- 2 half axles with 4 gear-motors UMC + 4 fixed gear-boxes.
- 1 swivelling head.
- 1 hydraulic feeding with swivelling elbow (no necessary operating at inversion).
- Variable camber.
- Orientation (turning) of the wheels by electric drive.
- 1 main control panel.



## RM 4 TD



### CART CONTAINING

#### *Swivel and Towable Model*

- 2 half axles with 4 gear-motors UMC + 4 fixed gear-boxes and declutchable.
- 1 swivelling head.
- 1 hydraulic feeding with swivelling elbow (no necessary operating at inversion).
- Variable camber.
- Orientation (turning) of the wheels by electric drive.
- 1 Pulling drawbar of the driving system.
- 1 main control panel.



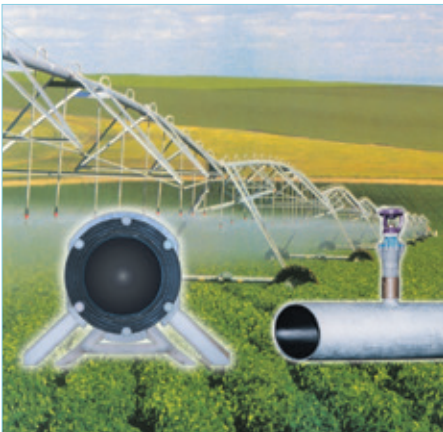


# ADDITIONAL OPTIONS

## Polychem



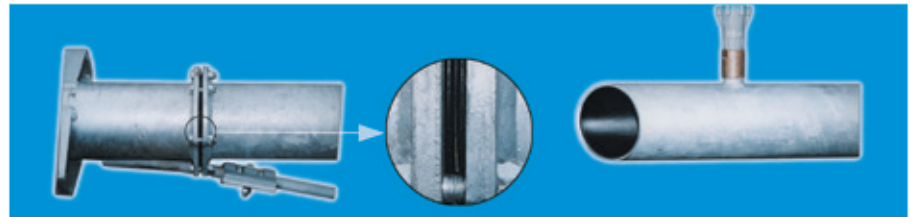
- Total corrosion protection / Wear protection.
- Improved flow coefficient.
- Impervious to corrosive water.
- Adapted for all modern techniques : chemical and fertilizer distribution.
- Pivot metallic structure and hydraulic performance longevity guaranteed.
- 15 years warranty for the polychem pipe.



### The polychem technique :

Internal protection of galvanized steel pipe by a 4,5 mm thick high density polyethylene pipe formed by the hot pressure process.

The pivot hose polyethylene lagging technique eliminates corrosion, brings longer life time, economy, and safety in  $\varnothing$  141, 168, 193.



## Fertirrigation / Chemigation

The option « fertirrigation/chimigation kit » offers to possibility to inject a fertilizing solution or treating solution at the pivot inlet. The concentration can be regulated with a dosing pump.

The device consists of the following items :

- Tank for storage of the solution (from 250 liters to 2 000 liters)
- Agitator to maintain the solution homogeneous
- Dosing pump to regulate the input of solution into the system (from 5 liters/hour to 2 000 liters/hour)

Irrifrance telematics system (IMS) allows to control the option « fertirrigation/chimigation kit » and thus to start/stop the dosing pump according to sectors programmed (up to 20 irrigation sectors).

NB : when the solution is corrosive it is recommended to add the "Polychem" option to protect the pivot pipes with internal liner made of polyethylene 4.5mm.



# ADDITIONAL OPTIONS

## Pivoflex



**Increase your irrigated area to increase your yield :**  
PIVOFLEX is an articulated coupling of our VXP range. It allows the spans following this type of coupling to run behind an obstacle (trees, poles, buildings, ponds, etc...) reclaiming lands previously dry, without having to install any other irrigation systems.

The PIVOFLEX system rotates on two nylon supports for an optimum movement, improved liability and a longer life span.

THE PIVOFLEX has the same material and construction qualities as for the VXP range.

**A solution adapted to your plot requirements :**

Place the PIVOFLEX system on any tower of the pivot. The selected tower of the pivot becomes the point from which the external spans can cover an additional angle of 165° maximum, in both ways. The external spans can add up to more than 300 m from the PIVOFLEX point.

**Gain time with the automatic realignment :**

Compared to a standard pivot, the automatic reverse system allows the external spans to come back to their initial position. The PIVOFLEX coupling system realigns the spans and then resume its work just like a standard pivot.

**Is compatible with all existing VXP pivots :**

The PIVOFLEX system can be installed on any existing VXP pivot.

## Retractable Overhang



To enrich its range of pivots and lateral move machines Irrifrance launches the retractable overhang. This system optimizes the irrigated areas by pivots, avoiding obstacles, woods, poles, sheds, etc... Completely automatic and secured, it allows to stop the pivot's advance by releasing the gate at the entry of the obstacle. Then the water is drained out of the overhang, which will swing around by 90° with an automatic locking in position. The pivot starts its course again, up to the next gate (door), from which the overhang deployment will occur and will start to irrigate again. The swing overhang 28m VXP is compatible with all models of the Irrifrance VX and VXP range pivot.



# NOZZLE SET

## Nozzle Set



NELSON D 3000 SPRAY

The nozzle set defines the way of applying water on the field.

An accurate irrigation is obtained through a well defined nozzle set which must be adapted not only to the structure but also to the climate, topography and agronomical data of the field to irrigate.

Nozzle set choice is also constrained by hydraulic parameters: flow and pressure of the system.

The nozzle set chart indicates sprinkler distribution and nozzle sizes along the spans in order to maximize uniformity of irrigation.

**"SPRAY" SPRINKLERS** can run at low pressure (< 1 bar - 15 PSI). Their radius is usually around 5 meters/16 feet).



ROTATOR

**"ROTATOR" SPRINKLERS** include a rotating plate when **"IWOB" SPRINKLERS** have oscillating pendulum. Their radius reaches 10 meters / 32 feet and offer good uniformity. Pressure requirements are slightly higher even if **"IWOB"** sprinklers offer good performance from 1 bar/15PSI.

**IMPACT SPRINKLERS** are mounted up-top on spans. They provide good uniformity but they are very wind sensitive. They need a pressure of at least 2 bar/30PSI.



SENNINGER SUPER SPRAY



I-WOB



IMPACT SPRINKLERS



F44 SPRINKLER

**END GUNS** are positioned at the extremity of the machine to increase irrigated surface without extending the structure. Their radius usually reaches 25-30 m (82 - 100 feet) depending on available flow rate and pressure but they need pressure to work properly. A booster pump can be coupled with end gun to boost its inlet pressure without impacting pressure in the rest of the system.



KOMET GUN



SIME GUN



NELSON GUN



# ***irrifrance***

## The optimal solution

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