



Water Saving Solutions



PIVOTS and LINEARS



OTECH company

In 1993 OTECH bought IRRITEC (a subsidiary of IRRIFRANCE) and its plant in Puyoô (south-west France) has been manufacturing pivots and linears since 1980. Thanks to its industrial installations and to its know-how, this plant has the capacity to produce more than 3000 spans and more than 400 linears per year. OTECH and its subsidiary OTECH40 (based in Mont-de-Marsan) employs eighty people who are committed to the development of our products. Production at OTECH is focused on two key areas: **the conservation of water and energy and sustainable development.**

The Puyoô plant comprises a covered manufacturing unit of 11000 m² situated in an area of 3 hectares. Its centre for research and development is at the heart of the site.

Production is 100% automated, carried out under the **KANBAN system** and is subject to rigorous quality control checks.

The manufacturing process is entirely integrated and takes place under one roof. This includes the manufacture of the main control panels and control boxes as well as the uploading of software.

OTECH can very quickly supply on request any spare parts for product ranges manufactured at its plant (Lockwood, Perrot, Irrifrance, MS, TS, VS, Bancelhon, Rain France). OTECH is also the specialist in components for pivots, such as gears, gear motors, main control panels, alignment units, rings, wheels and electric cables.





Adapted solutions to optimise water and energy use

Pivots and linears can be adapted to suit any surface from three to several hundred hectares, taking into account energy costs, water requirements of the crop, and labour.

OTECH emphasizes the principle that **'by using the right pivot and right nozzle, you can achieve an evenness of irrigation of 90 to 95%** without needing more pressure and energy than the 'drop by drop' system.

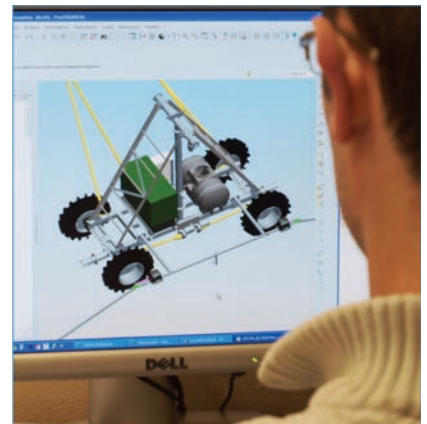


Continuous innovation

During the last few years, OTECH has developed the **DOSITECH** (remote management system), the **HD Pivot** (hydraulic), the **retractable overhang** and the **folding span**. OTECH also designs many products for specialist crops as well as for industrial applications.

All products are developed with the continuing effort to bring:

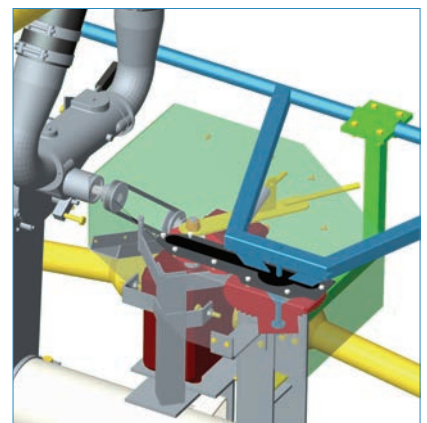
"IRRIGATION, WHERE YOU NEED IT, WHEN YOU NEED IT."



An investment for more than 10 years

The lifespan of a pivot is much more than 10 years. **Some machines are still operating after 25 years.** It is, therefore, a long-term investment.

In addition, the **maintenance costs are very low**, making a pivot or linear **the least expensive and most profitable irrigation system per hectare.**



Electric Ring

- 12 rings 25 amps
- Mounted on a watertight bearing
- 3 contact points per ring
- Electric connection to a fixed socket
- Possibility to manage 2 options
- Electric cable control panel / ring 4G6 + 10 x 1.5 + 3 x 0.5
- Set up for angular encoder
- Protective cover IP233, UV



Main control panel

- Polyester casing 645 x 435 x 250
- Double door
- IP66 protection
- Schneider Electric components (tele-mechanics)
- Synoptic display including :
 - Direction indicator
 - Operation of last tower
 - End gun operation
 - Pressure indicator
 - Low pressure auto stop
 - Integrated protection system for operators
 - Otech timer - accuracy within 1%



Joins between spans

- Cardan joints for the best stability
- 4mm thick tubing for a longer life
- Galvanised steel coupler with lip seals for easy access
- Tolerates slopes up to 18% and an angle of 20° between two joining spans
- Automatic drainage
- Alignment by cable possible for machines bigger than 600m or comprising more than 15 spans



Tower casing

- Galvanised steel
- Polyethylene cover with stainless steel latch
- Magneto-thermic circuit-breaker for engine protection
- Control and security microswitch up to 50 million operations
- Delrin cam
- Spring and hardware in stainless steel box

Kinematic chain

- Gear UMC type 740-U: 1/50 ratio
- Gear motor UMC type PS 3.5 aluminum shell, 0.55 kw: 1/40 ratio
- Integrated thermistor
- Power peak ratio 1.3
- Transmission: 22 x 22 square + cardan aluminum UMC
- 8 ply tires
- Galvanized rim with valve protection
- Thickness of flank 6mm, thickness of rim 4mm

Span structure

- Steel tubes S275 in high grade carbon
- 3mm thick (standard) or 4mm thick (option)
- Length of tubes 6m and 12m
- Iron frames of 50 x 50 x 4
- High resistance steel tie rods S355
- Flanges in polyethylene
- Diameters from 127 to 244.5
- Available lengths of spans: 38m, 44m, 50m, 56m, 62m
- Option of **Plascoat** protection which is highly resistant and reduces pressure loss.

Overhang

- Available lengths: 6m, 12m, 18m, 24m, 30m (standard)
- Diameters Ø127 and Ø88.9
- Option of **Plascoat** protection

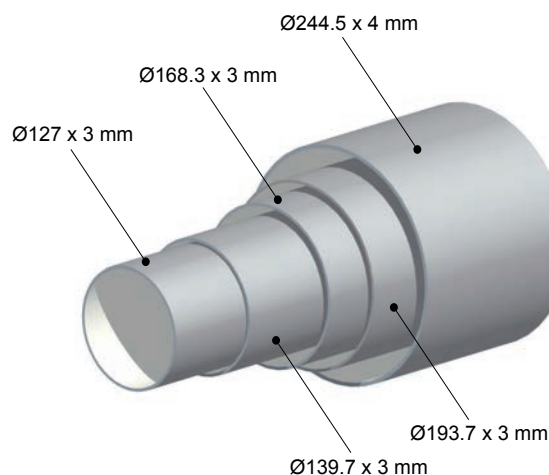
IMPORTANT

The dimension of a pivot (choice of diameter) can have significant impact on energy and cost savings.
Example :

Pivot of 100 ha at 8 mm/j = 330 m³/h
 330 m³/h at 6 bar = 77,0 kW
 330 m³/h at 3 bar = 38,5 kW
 Saving = 38,5 kW

Over a season of irrigation (2000 h) :

Saving = 38,5 x 2000 = **77 000 kW**

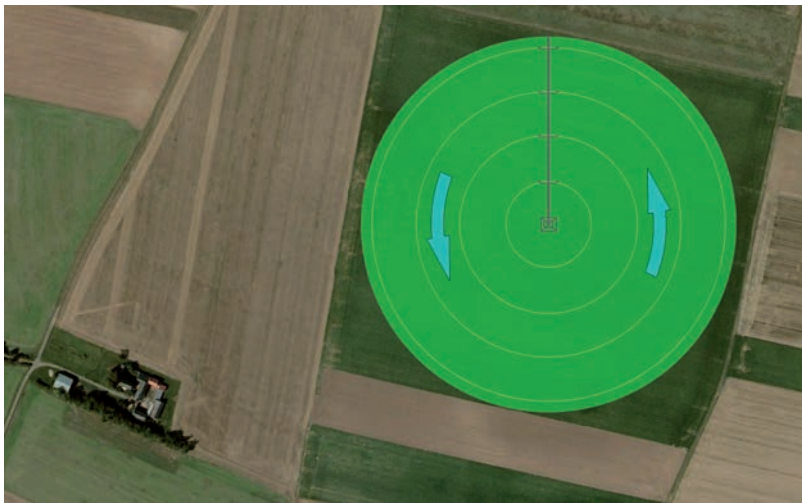
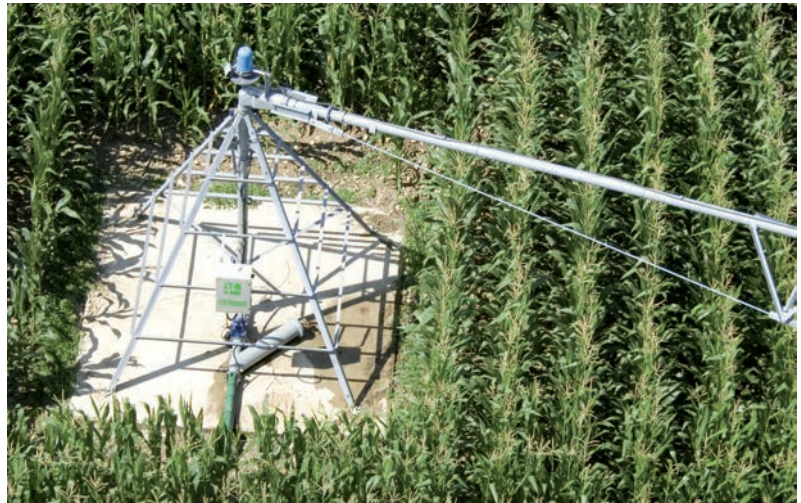


PIVOTS

Pivots are irrigation systems consisting of one or more spans which rotate around a fixed point anchored to the ground.

The Full Circle Pivot

The spans turn repeatedly around a fixed central point. They are simple to use and require little intervention. These machines are both reliable and excellent value for money.



The Zonal Pivot

The spans rotate less than 360° and therefore maximize the irrigated surface area when there is an obstacle (farm building, tree, pylon etc.) situated in the middle of the field, or where the shape of the field does not allow full rotation.

An automatic reverse system allows continuous operation whilst the security system ensures that the spans stop at the end of the irrigated zone.



The H.D. Pivot (hydraulic system)

Equipped with a hydraulic turbine, this pivot operates without electricity. This system is exclusive to OTECH. The water needed to operate the machine is integrated into the system and used for irrigation.

Consisting of a span, an overhang and an end gun, it can irrigate an area up to 4 ha at a rate of 33 m³/h.



TOWABLE PIVOTS (by tractor)

This machine is equipped with a tower on swiveling wheels and a central unit on a moveable chassis fitted with a beam.

Once the wheels are aligned with the span's axle, the whole machine can be moved by tractor.

This type of pivot allows a reduction in the cost per hectare irrigated by increasing the area covered by the same machine.



THE SPEEDY RAIN (self-moving)

The Speedy Rain is a machine which can be moved autonomously. It operates as a pivot during the irrigation phase by rotating around its central tower. During the movement phase it becomes more like a linear. Requiring no tractor, the machine moves via a wired remote control.

In certain cases, a furrow guidance system can be used for an automatic operation between two hydrants.



LINEAR MOVES

Linear moves are systems consisting of one or more spans which can be used autonomously. The water supply arrives via a pulled pipe or by drawing water from a lateral channel.

The electricity supply comes from a pulled cable or from a generator loaded on the machine.

These machines can be adapted to suit the different layouts of fields by following different circuits - linear or combined (linear and circular).

OTECH is the indisputable European leader in this field with more than 2000 linear moves around the world.



Linear 2RM1

This machine allows a 'back and forth' irrigation via a linear of five spans maximum. This model is ideal for small to medium-sized rectangular fields.

- Tower with axle and two motorized wheels
- Hydraulic water supply via a flexible pipe or a PEHD connected to a rotative elbow.
- Can accommodate an electricity generator
- Possibility to add a cantilever scythe in order to increase the irrigated surface area
- Furrow guidance system or steel cable
- Moveable version available



Linear 4RM1

'Back and forth' irrigation via a linear of 10 spans maximum.

- Hydraulic water supply via a flexible pipe or a PEHD connected to an articulated elbow
- Tower on a chassis with 4 motorized wheels
- 2 jointed axles for a better adaptation to the terrain
- Can accommodate an electricity generator and a diesel tank
- Possibility to add an overhang at each end of the spans
- Furrow guidance system or steel cable





Linear 4RM1-2

'Back and forth' irrigation with a linear move
Two lines of spans mounted on both sides of the motor which allow the flow to be spread out and reduce water loss

- Hydraulic water supply
- Tower on a chassis with 4 motorized wheels
- 2 jointed axles for a better adaptation to the terrain
- Can accommodate an electricity generator
- Possibility of hydraulic water supply via a loaded gen-set and a self-cleaning strainer by drawing water from a lateral channel at rates of up to 800 m³/h
- Furrow guidance system



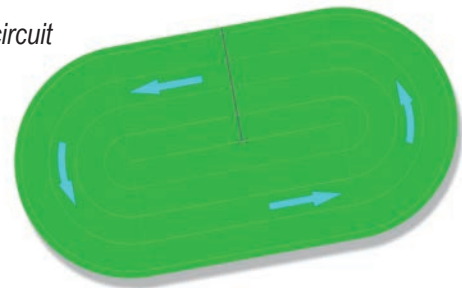
Linear 4RMVE

This model can perform combined programs (linear and circular) thanks to its articulated elbow adapted on a large bearing. Its structure, being similar to that of a pivot, allows the spans to do an about turn and therefore increase the irrigated surface area.

Its operation can be completely automated.

- Hydraulic water supply via a flexible pipe or a PEHD connected to an articulated elbow
- Tower on a chassis with 4 motorized wheels
- Can accommodate an electricity generator
- Furrow guidance system or steel cable

4RMVE circuit



Linear 4RMG - 4RMGD

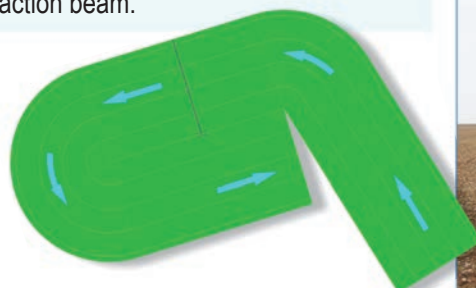
The linear 4RMG can perform a combined program (linear and circular) identical to that of the linear 4RMVE.

A system which rotates the motorized wheels via a wired remote control allows the machine to change direction so it can be best adapted to the shape of the field.

- Hydraulic water supply via a flexible pipe or a PEHD connected to an articulated elbow
- Tower on a chassis with 4 motorized wheels
- Can accommodate an electricity generator
- Furrow guidance system or steel cable

The model 4RMG-D can also be moved by a tractor with the help of a traction beam.

4RMG circuit



CONTROL SYSTEMS

OTECH machines are controlled by an intuitive control panel with electro-mechanic components which are robust and reliable. Optional control tools can be added:

DOSIRAIN G2 - allows you to directly adjust the desired application rate in mm by setting the required program time.

DOSITECH.Net - allows you to adjust the water application in several zones via a tactile colour interface. Among a multitude of other functions, the machine can be operated from a PC connected to the internet and receive alerts via GSM.



The Sprinklers

These small accessories play an essential role in the operation of an irrigation system. They allow an even and uniform irrigation and have a direct impact on the yield of a crop.

OTECH offers a wide choice of sprinklers and works with the biggest manufacturers in this field.

The economic consequences linked to the operating pressure of sprinklers should not be underestimated. That is why we offer a range of products starting at 0.7 bar.

The use of pressure settings will guarantee a consistent operation whatever the profile of the land.

The use of lowering arms is a major advantage, bringing the sprinklers as close as possible to the crop and therefore reducing water loss through exposure to the wind.

In certain cases, an additional end gun can be installed at the end of an overhang in order to optimize the total irrigated area.



SPECIFIC MACHINES

Swingable overhang

With a maximum length of 30 metres, the swingable overhang optimizes the irrigated area by avoiding obstacles such as houses, trees and pylons.

The whole overhang is mounted on bearings on the last tower allowing a rotation of a quarter turn, and stabilized with a central weight.

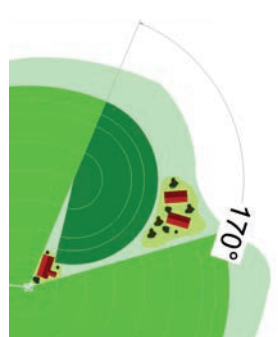
The automated rotation is synchronized with the start / stop of the sprinklers and end gun, therefore allowing the irrigation of areas inaccessible to a standard machine.



The folding span

Offering maximum flexibility, the folding span is the ideal solution for bypassing obstacles in the middle of fields. The spans downhill from a tower equipped with a rotating axle continue to irrigate whilst the spans uphill from the tower are stopped with their sprinklers shut off.

Two models are available allowing angles of 120° or 170°.



Double pivot: the distribution of water flow from two lines of spans reduces loss and therefore energy consumption.

Instantaneous application is equally reduced.



Linear "drip irrigation": this type of machine marries linear technology to that of drip irrigation to take water directly to the base of the plant (for lettuce etc.), so avoiding water applied to the leaves.



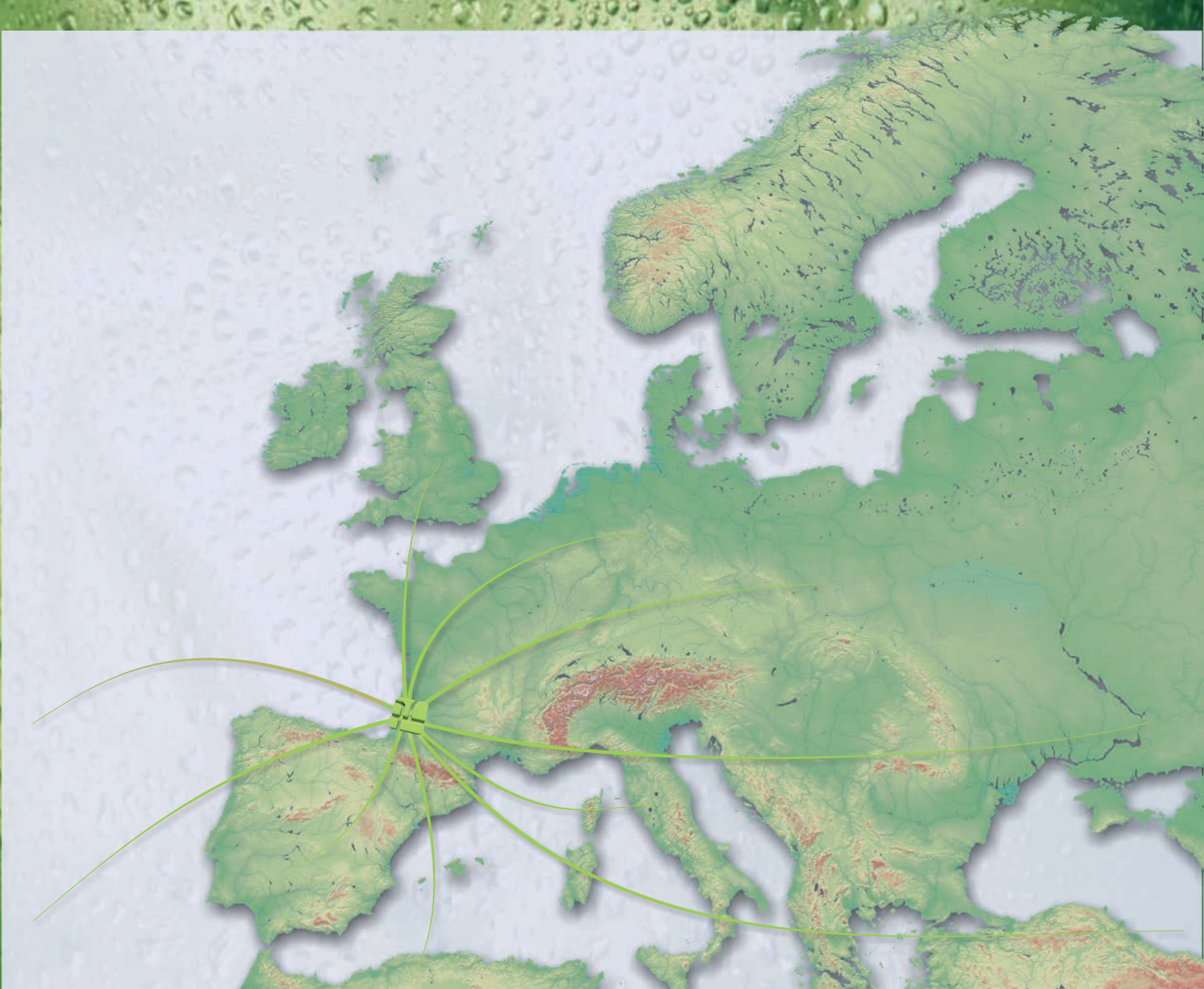
Lowered tower: for low crops, results in a reduction in water lost to the wind by irrigating closer to the plant.



Special projects: OTECH is able to research machines for special tasks, such as this self-propelled pivot for a Michelin test track.



Operating in over 30 countries
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Our brands:

