



IRRILAND SRL

1. GENERAL INFORMATION ON THE COMPANY

Name of Company	: IRRILAND SRL
Company address	: VIA P. TOGLIATTI N° 4 - Z.I. SAN GIACOMO 42016 GUASTALLA (RE) - ITALY
Offices	: VIA P. TOGLIATTI N° 4 - Z.I. SAN GIACOMO 42016 GUASTALLA (RE) – ITALY
Open field test area	: VIA SAN GIOVANNI – 42044 GUALTIERI (RE)
Telephone	: +39 0522 831544
Telefax	: +39 0522 831548
Web site	: www.irriland.it
Front desk email	: info@irriland.it
Orders and order confirmations	: trade@irriland.it
Shipments	: commerciale@irriland.it
Book keeping email	: accounting@irriland.it
Personal email addresses	: available after a relationship is established
Social networks	: FB, youtube, google plus, linkedin
Activity	: Design, development, manufacturing, installation and after-sales service of irrigation systems and agricultural machines
Chief Executive Officer	: Mr Claudio Manghi
Sales Manager	: Mr Diego Maione
Shareholders	: 100% Mr Claudio Manghi

The Company was established in 1993, expands on an area of about 5000 sqm, with a manufacturing department of about 3000 sqm in which are working 15 workers and about 300 sqm of offices in which 15 people (directors, managers and employees) highly qualified staff with substantial experience, matured in companies leaders in the field of irrigation.



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Now the company has two production lines: one is for the three medium and large series and there's a second one for the small machines and the booms.

The company also has its own test fields always available for the important products research and development.

The turnover was 7.5 Mil Euro in 2015, 6.6 Mil Euro in 2016, 6.3 Mil Euro in 2017, 6.4 Mil Euro in 2018 and 7.7 Mil Euro in 2019.

The technical staff of the company is able to analyze and solve any problem arising during the phases of design, manufacturing, installation, first start and programmed maintenance.

The company is provided with a technical office with system CAD 3D Solid Edge in which are analyzed and developed the design of new machines.

2. BRANCH OF ACTIVITY:

Irriland Srl manufactures :

- Irrigation machines;
- Irrigation booms;
- Pivot systems;
- Slurry separators;
- Motor pumps;
- Generating sets;
- Protector;

2.1 IRRIGATION MACHINES



Generally equipped as follows:

- Hot galvanizing;
- Turnable frame;
- Water turbine rewinding;
- Multispeeds gear box filled up with oil;
- P.T.O. on the gear box for emergency rewinding;
- Accident protections;
- Electronic speed indicator;
- Manometer filled up with glycerine;
- Sprinkler;
- Sprinkler trolley with adjustable track and height ;
- Flexible connection hose with coupling;
- Handle for manual rewinding;
- Speed corrector on independent by-pass;
- Automatic stop at the rewinding end;
- Hydraulic speed adjustment;
- Hoseguide system with screw without end;
- Hydraulic trolley lifting;
- Adjustable height of the drawhook;
- Rear establish legs with handle;
- Front legs on the frame;
- Chassis with adjustable wheels track.



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The Irriland machines are all built with a galvanized steel frame and with a galvanized steel drum.

Our special water turbine gearbox drive warranty the rewinding of the hose also with a very low pressure: 1,0 bar. This isn't the pressure the machines have to be used to get good results but it's a sure warranty the turbine pressure loss is very low. The polyethylene pipe is of the first quality level and it's weldable in the case of broken caused by exterior tools.

The guns with slow return have been included in the standard equipment following the CE safety norm.

The machine in its standard execution is ready to work: the customer has just to provide water in pressure.

2.2 IRRIGATION BOOMS: RAPTOR AND XILON SERIES

The "Raptor" irrigation system allows low operating costs and versatile use.



Raptor boom: model 35/43

With the Irriland irrigation booms You can irrigate the most fragile crops without damaging them.



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Irriland booms and Irriland automatic irrigators are a perfect combination that allows fast winding even at low pressure.

The main features of the Raptor booms are:

- in the hydraulic version the working height can be changed from 1 to 3 meters;
- fast installation : opening or closing are facilitated by the special design galvanized steel folding structure; operations are completed in almost no time by just one person;
- loading the OPEN boom head on the Irriland automatic irrigator for short relocations;
- loading the CLOSED boom head on the Irriland automatic irrigator during transportation;



Xilon boom: model 49/57

Xilon boom are strong, fast to assemble and very competitive with an irrigation width up to 70 m!

Some additional features common for both series:

- low pressure operation (1-6 bar) with very high flowrate and very fine drips size; the very fine drips size is achieved by means of special flat jet nozzles;



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- uniform water distribution even with wind;
- balance controlled by a special self-levelling system even in windy conditions (option)
- pressure regulators and final sprinklers available as option
- wonderful stability ensured by the special cart that has a large base

2.3 PIVOT SYSTEMS



Designed and manufactured for efficient operation, high performance and low running costs, the Irriland center pivot is equipped as follows:

- Sturdy and entirely hot-galvanised structure
- Pipes available in diameters 8" (203 mm) – 6 5/3" (168 mm) – 5 1/4" (133 mm)
- Spans available in 30-36-42-48-54-60-66 metre lengths with 3.3 m free height off ground
- End arm, in fixed or revolving version with independent movement, available in 6-12-18-24-30-36 metre lengths
- Flexible coupling of various spans able to absorb inclinations both in a longitudinal and crossways direction, thus preventing any twisting of the various elements making up the structure on rough terrain and with gradients up to 30%

- Electromechanical feed command and control system to ensure maximum reliability under all working conditions
- Pre-wiring of all power components in factory to simplify installation operations in the field by means of sealed quick-coupling connectors
- Innovative mechanical drive system providing up to 25% better performance compared to traditional systems
- Autoreverse system for automatically reversing directions of System movement at a preset point
- Automatic stop system in case of fault
- Emergency stop buttons on all wheels and on the side of the main panel
- Minimum running pressure: 1,5 atm
- Wide selection of irrigators, sprinklers or sprayers able to ensure maximum uniformity of distribution according to the type of land, crop to be irrigated and specific operating conditions.

2.4 SEPARATORS, PUMPS AND MIXERS FOR SLURRY



It meets the needs to separate the liquid part from the solid one in the treatment of agricultural and industrial effluent through the pressing with an inside Archimedes' screw engine.



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It gives the right solution to the slurry stockage problems, allowing additional profits with an oriented use of the solid and liquid substances reducing considerably the waste-materials.

The liquid product can be distributed through the useful systems and stocked without crust and sediments formation, it is a good organic fertilizer and it is more easily absorbed by the ground, reducing the formation of smell compared to the slurry utilization.

The solid product is easily stockable too, it is a ready product without smell, useble as a precious instrument in the ground fertilization and as a solution in the floriculture fields.

Thanks to the great performances, the separator can be used in the industrial field too, for example in the food industry, in the butchering and in the treatment of biological waste-materials.

The advanteges that the separator offers are of interest for the assigned of several sectors.

TECHNICAL INFORMATION :

- Stainless steel structure
- Operating with an electric motor having a power of 3 – 5 KW direct coupled to the oil bath epycicloidal gearbox.
- Hardening process of the screw – Archimedes' screw to increase the wear strenght.
- Low maintenance, thanks to the chainless, bearingsless and supportless to be greased, lubricated and checked.
- Vibrator to separate.
- Easy regulation of the machine to identify the umidity rate in the dry separated product.

- The slurry should be incorporated in the separator with proper pumps rightly proportioned and suitable to convey dirty water with possible blocking pieces.

A large range of chopper pumps and mixers is also available and includes:

- submersible pumps and mixers
- pto driven pumps and mixers
- horizontal bare shaft and flanged pumps for diesel engines
- electric surface pumps
- vertical pumps driven by electric motor or by pto



The version for Biogas systems is also available.

2.5 DIESEL PUMPING SETS



DIESEL PUMPING SETS with the following equipment:

- Air cooled or water cooled engine



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- Engine protection device,
- Diesel engine electric wiring
- Horizontal centrifugal pump with counterflanges on suction and delivery
- Coupling between engine and pump flanged (F) or with industrial cardan shaft (G)
- Steel trolley with two tyres, towing bar, maximum speed 20 Km/h (not homologated), adjustable front holding foot, two adjustable rear holding feet or fixed base frame
- Fuel tank included in the structure of the trolley, standard capacity of 400 litres
- Completely hot galvanized trolley or base frame
- Antivibration pads between engine and trolley or base frame
- Starting battery of proper power ready to start with connecting cables to the engine
- Fuel tank cap without lock
- Special "CE" protection roof totally galvanized with four side grating
- Use and maintenance manuals for engine, pump, engine protection device and motor pump set

Engines :

- VOLVO PENTA
- IVECO AIFO
- PERKINS
- VM
- DEUTZ
- SAME
- LOMBARDINI – KOHLER
- JOHN DEERE

Pumps:

- ROVATTI
- CAPRARI
- SAER
- VINCENZI&GIBERTINI
- VARISCO



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3. COMPANY STRATEGY AND ORGANISATION

3.1 OPERATIONAL ORGANISATION

The company Irriland does all the designs, the projects, the research, the tests and the development of its products and when they are approved let some contractor companies to prepare them on our precise instructions and strictly for Irriland.

The steel parts will be directly delivered to galvanizing companies for the hot galvanization process. After that, they will be delivered to Irriland as well as the components for the quality test.

Irriland staff proceed with the products assembling once the quality test is positive and on the base of the production orders authorized by the production manager. During and after the assembling the products are tested in order to avoid problems to the final client. When the final test is positive, the products are ready for the delivery.

3.2 STRATEGY

As the market and the economies are very often unstable, the main target of the company owners and managers has been to grow up a structure able to resist to the eventual market instability and economy crisis. That's why Irriland has been organized with an external production charged on different small contractors. This way the company organization is light and flexible and allow Irriland to vary the production a lot every year with no balance difficulties, only depending on the market needs.

In relation to the products, the Irriland target is pretty simple: total reliability, high performances and simple handling. All our machines are simple, strong and rise the top-level performances already in the basic equipment. In addition, the



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company has developed a full line of options and models that enable the product adaptation to any market request.

3.3 TARGET

Irriland products have always got an advanced technology level and their performances and long life have always demonstrate it year by years since 1993. Irriland has always paid a lot of attention to the market needs and to the market problems and has researched the solutions with knowledge, constancy and passion.

That's why the Irriland solutions have been very often copied by other producers.

Now the target is to keep for us our developments and our technology advantages so we started up with the first patent.

"Protector" system is patented in EUROPE, USA, and ASIA.

It is a revolutionary system that drop down the friction of the pe hose of the reel machines during the pulling out and the rewinding.

Benefits Expected

- Reduction of operational costs. With PROTECTOR, friction reduces by 90% and weight of the hose is consistently reduced too. This decreases the efforts needed to pull the hose and the water head loss, thus consuming less fuel. Fuel savings: 22% in pumping water and 40% in unrolling and rolling the hose.
- Increase machinery lifespan. PROTECTOR will protect the hose from abrasion, extending its useful life. Also, it will prevent from the hose breakage or the machinery overturn when the hose gets stuck on wet, rainy or muddy grounds. 20% reduction of GHG emission at the end of the economic life of the irrigator.
- Avoid the soil compaction caused by heavy tractors. PROTECTOR allows for the use of lighter hoses so that tractors used to pull them can be less powerful and hence lighter and cheaper. Lighter and more manageable hoses.



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- Increase irrigation efficiency. The lower friction allows to thinner hoses, increasing the internal diameter and being able to carry a higher quantity of water. Double hose lifespan
- Increase irrigation accuracy. With PROTECTOR, the rewinding of the hose is faster and without problems related to hose sticking. It allows for a more homogeneous and accurate irrigation of the crop. Fewer failures & breakages (estimated savings 5 – 10%).



The Eima show committee has prized the “Protector” in 2016 as new important invention and as new energy saving system.



The development of Protector has been financed by the Horizon 2020 research and innovation programme of the European Union (G.A.822123)



Irriland will continue the products development but saving the new inventions and increasing systematically the technology difference with the competitors. The technology level will be the key point for the turnover growth because the items and systems the company is developing will improve the competitiveness, the efficiency and the quality level of the different product lines.