

radio frequency equipments

Textile Division

There's no better way to dry



➤➤ Nothing is more important than the recognition from our customers as they continue to use our equipment. This is what drives us to search the best technologies and to provide innovative solutions for the expansion and growth of our customers.

RF SYSTEMS

THE FINE ART OF DRYING



RF SYSTEMS stands as the world leader in development, engineering, manufacturing and after-sale services of radio frequency equipment. We have installed equipments in more than 54 countries and we own the widest portfolio of patents related to the radio frequency technology.

WE ARE A DYNAMIC COMPANY

Our company has dynamic management: all the people involved are customers and innovations oriented. They are flexible and ready to meet and satisfy all the various requirements, offering custom made solutions.

WAY TO INNOVATION

Our team is constantly investing in research and development in order to obtain the best in terms of quality and efficiency for the machinery that we manufacture. In order to guarantee reliability, durability, adaptation and an unbeatable quality of the final product we pay the maximum attention to each detail. Through meticulous planning, we certify and check each single passage of the production process. RF Systems gives an efficient and fast answer to the requirements of the international market.

CLIENT'S SATISFACTION IS OUR MISSION

In our view the customer has a primary role. This is the reason day after day our managers and our staff aim to satisfy all of our customer requirements. We guarantee continuous development, research of new applications and creation of completely new custom made solutions.

30 YEARS OF PASSION, RESEARCH AND ON-GOING INNOVATION

Good technology and superior know how are not enough to offer the best radio frequency dryers in the world: it requires passion, on-going research, a skilled staff and a close attention to details. From more than 30 years we continue to guarantee the best technology and service in order to increase your business and offer the best RF products in the world.

CUSTOM MADE SOLUTIONS

Each of our systems is developed and designed according to the specific needs of the customer, in order to ensure the best quality and a perfect fit into the existing production line.



THE ROAD TO SUCCESS

30 YEARS OF PASSION, RESEARCH AND ON-GOING INNOVATION

Buying one of our dryers gives you the best quality, technology, reliability and a first class after sale service.

Customer first. This is where all our efforts are focused in order to satisfy our customer's demands with products that are durable and meet the strictest standards of the RF SYSTEMS brand.

We measure our success on customer satisfaction.

Nothing is more important than the recognition from our customers as they continue to use our equipment. This is what drives us to search the best technologies and to provide innovative solutions for the expansion and growth of our customers.

From more than 30 years we have guaranteed the best technology and service in order to increase your business and to offer the best radio frequency products in the world.

FACTS AND NUMBERS

OUR BEST TECHNOLOGY READY
FOR YOUR COMPANY

1.790

RF units in the world

50%

Yearly cost savings in running costs
compared to a traditional hot air dryer

42

Patents deposited by RF Systems
related to radio frequency equipments

OUR RF TECHNOLOGY

THE SIMPLE AND MOST EFFICIENT
WAY TO DRY THE TEXTILE FIBERS.
ALSO THE MOST DELICATES ONES.

Being able to dry quickly, evenly and with very low energy consumption is a requirement that every day becomes more important in the textile industry. Our radio frequency technology is based on evenly exciting the water molecules present in the product, giving a homogeneous and uniform heating up to 80 cm of thickness. The final outcome is fibers perfectly dried at low temperature with uniform moisture across the product.

ADVANCED TECHNOLOGY FOR THE BEST RESULTS

Our radio frequency technology is based on evenly exciting the water molecules present in the product, which starts to heat up very quickly by them rubbing against each other. The water then is converted to steam that is released from the product and extracted thanks to a fan in the top of the drying gallery.

EVEN AND UNIFORM DRYING AT LOW TEMPERATURES

With our technology you can dry products with a thickness up to 80 cm quickly and evenly. Furthermore, the drying process is characterized by low temperatures as the fibers are not heated up, instead the technology works selectively on the water content. The drying process is always uniform across the thickness of the product, ensuring the best drying results.

REDUCED ENERGY CONSUMPTION

The energy consumption of the system is related to the quantity of water inside the product which is in process. Based on the quantity of product being processed, then, only the quantity of energy required will be used, allowing a significant saving in the operational costs.

LOW MAINTENANCE

Our systems are developed with industrial grade components, oversized in respect to their real usage, in order to allow a simple and reduced maintenance and production stops almost nonexistent.

OPTIONAL AUTOMATIC CONTROL SYSTEM

The machine can be equipped with a system that adjusts on its own all the parameters, the power is set automatically, based on the real needs of the product to be treated, insuring you the best drying quality and minimizing human error.



XDry

Thanks to the XDry technology, which recovers the outgoing cooling air flow of the triode and conveys it back into the drying tunnel, we guarantee an efficiency 20% higher than the other traditional RF dryers can guarantee.



EfficientSynergic

With the integrated EfficientSynergic technology, exclusive of RKB, that combines hot air flow with radio frequency, we deliver you the most environmental friendly technology available in this sector along with an incredible efficiency (up to 95%).



Fire Protection

Our exclusive fire protection system, which is solely developed for our dryers, features a high speed ejection system which allows a quick and safe expulsion of the load from the machine in case of a fire.



Quick worldwide customer assistance service

Our customer assistance service is always operative and available for you, with quick interventions and the chance to receive spare parts on a high priority basis globally.



Our dryers deliver more

Due to the particular design of our devices and our experience in the sector we are able to provide you high efficiency machines: about 20% more than other traditional RF standard dryers.

up to 20%
MORE

Reduction of production times

Thanks to the RF technology and the flexibility towards real requirements, you'll be able to reduce the processing times while increasing the production, always with the maximum quality.



Custom made solutions

We supply custom made solutions and our research team is prepared for any challenge. We're ready to satisfy all of your needs with top quality response and a short lead time.



Lowering the cost of processing

An RF dryer shall guarantee your company the best technology on the market and a lower processing costs compared to the traditional air dryers saving you up to the 50% on the processing costs.



WHY RF SYSTEMS

HOW TO CHOOSE AN RF DRYER

ALL THE KEY PARAMETERS TO CHOOSING THE RF DRYER SUITABLE TO YOUR NEEDS.

When you choose an RF dryer it is very important to understand the key parameters in order to have the equipment tailor made to your needs. The key points listed below allow you to understand very quickly which equipment is more suitable for your needs based on the production requirements.

CHOOSE THE CORRECT RF GENERATOR POWER SIZE

The generator is sized based on the quantity of moisture that needs to be removed from the product per hour. The general rule is that 1 kW of RF power is able to remove from 1,2 to 1,3 L/h of water (based on the density of the product) for the traditional RF Dryer, 1,8 L/h of water for the new Hybrid Dryer and up to 2,5 L/h of water for the RKB system. Our generators are available from 5 KW up to 150 kW and can be air cooled or water cooled based on the environmental condition of the installation site.

THE IMPORTANCE OF THE POWER DENSITY

The power density is a very important factor on an RF dryer. Basically it is the ratio between the area of the electrode and the RF power installed in the machine. The power density needs to be chosen very carefully based on the product that will be treated. For applications with synthetic fibers like panty hoses for example, it is important to have a very low power density in order to not overheat the fibers. With products like viscose and cotton it is possible to work with a medium power density. The power density of our systems range from 5 Kw/m² up to 20 Kw/m² depending on the application.

THE RIGHT ELECTRODE FOR YOUR APPLICATION

The electrode is the element that allows the transfer and distribution of RF power through the product, it consists of a combination of a series of parallel aluminum tubes and plates and it is the result of 30 years of experience in RF technology. All our dryers are equipped with a mobile electrode that can be moved up and down to control the RF power transferred to the product. The electrode can be chosen between two types: the standard one for thicker products and a special double polarity one very suitable for thin products. An optional extra variable capacitor can be installed in order to use in the same machine with products that have different heights.

THE SMARTOUCH PANEL

Our innovative Smart Touch Panel allows you to control the machine very easily in a manual or automatic mode, monitoring in real time all working conditions. The on-board troubleshooting system allows you to very quickly problem solve showing the instruction on how to check the problem on the HMI panel.

OUR TRADITIONAL RF DRYER

THE WORLDWIDE TRUSTED RADIO FREQUENCY SYSTEM

Designed, engineered and produced since 1990 and sold in more than 54 countries, our RF dryers are considered the standard choice of companies that put the quality first. Our systems are developed with the highest grade EU components in order to guarantee nonstop production, and even and uniform process. In addition, achieve low maintenance and a seamless integration with the existing production lines.

»» **POSSIBILITIES TO WORK WITH MULTIPLE FORM FACTORS***

Our standard RF dryers can be set to work with any form factor like yarn packages, hanks, tops, smooth tops and loose fibers. And thanks to the use of the optional variable capacitor it is possible to work with two or three different form factors in the same machine without the need of separate equipment.

»» **XDRY TECHNOLOGY: THE ENERGY RECOVERY SYSTEM**

The XDry technology allows you to recover the hot air coming from the air cooling system of the generator and convey it back into the drying tunnel. Thanks to this smart solution it is possible to decrease the running costs and increase efficiency of the dryer between 8% - 10%.

»» **IMPROVEMENT IN COLORS FIXING**

Compared to the traditional air drying systems that transfer the heat from the outer side to the inner side of the product, in the RF the heat is transferred in a uniform way across all the product thickness. This means that there are no hot spots and the color is fixed in a uniform way without any migration of it.

»» **REPEATABILITY OF THE DRYING LEVEL**

The machine is designed to work with any ambient condition and it is not influenced by the temperature or the moisture around it, allowing a repeatability of the drying level despite the environmental conditions.

»» **READY FOR THE HIGH DENSITY YARN PACKAGES**

The density of the yarn packages has no influence on the drying process as the water molecules are excited uniformly across the entire thickness of the product ensuring a uniform evaporation of the moisture.

* The form factor must be specified at the time of order, and the machine will be set with the right parameters



100% cotton bobbins



100% polyester bobbins

OUR APPLICATIONS

DIFFERENT PRODUCT FORM FACTORS WITH THE SAME RF MACHINE

Our machines can be easily adapted to work with any fiber form factors like bobbins and yarn packages, hanks, tops, smooth tops, loose fibers or any other special format. The form factor should be specified in the order and we will set all the parameters in order to match the format required and save time during the startup of the equipment. With the additional optional variable capacitor it is possible to work with two different form factors like bobbins and hanks, or bobbins and loose fibers, in the same machine without the need of two separate pieces of equipment.



YARN PACKAGES



TOPS



SMOOTH TOPS



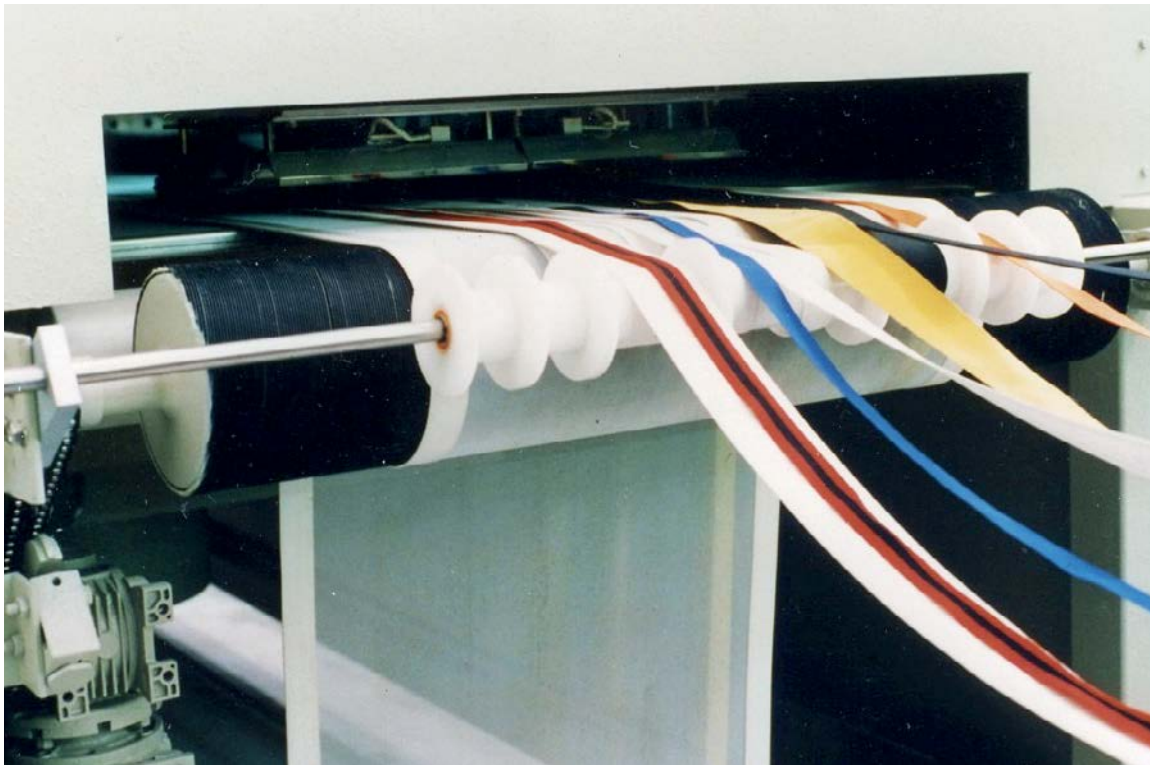
LOOSE FIBERS



HANKS



PANTY HOSES



YARN AND STRIPES



NON WOVEDS



COTTON FIOC



LEATHER



SPECIAL APPLICATIONS

OUR RKB SYSTEM

THE REVOLUTION IN THE YARN PACKAGES DRYING PROCESS

The textile industry demands systems capable of guaranteeing the highest quality production with short time cycles and the lowest energy requirement. This is the idea that inspired us to develop the innovative RKB dryer: a machine capable to duplicate the production of a traditional RF system while reducing the consumption by 40%. The result is the Efficient Synergic technology, a perfect combination between radio frequency and hot air that allows perfect control on the drying process and the lowest space requirement.

»» **THE EFFICIENT SYNERGIC TECHNOLOGY**

Our innovative Efficient Synergic technology, which is exclusive of RKB, combines a hot air forced flow with the radio frequency technology allowing a very precise control on the drying temperature and amazing power efficiency up to 95%. The RKB also it is the best choice for the high density yarn packages or the heavy bobbins as it is specially designed to allow the highest efficiency with this products.

»» **BIG PRODUCTION IN A SMALL SIZE**

Compared to the traditional RF equipment that uses a conveyor belt and works in a continuous way, the RKB dryer is designed to work in a batch process matching the drying machines time cycles. The result is a very compact machine able to dry up to 480 packages in one cycle. And thanks to the optional additional trolley it is possible to load the wet products while the first batch is in process saving time on the next loading.

»» **THE LOWEST POWER CONSUMPTION**

The RKB machine was designed to obtain the highest efficiency in the market with the lowest energy consumption possible. Every part is engineered to save the energy and reduce the power consumption, and every panel of the machine is insulated in order to preserve the heat generated during the drying process.

»» **NO OVERHEATING**

Thanks to the selective excitement of the water molecules there is no direct heating on the fibers that dries at low temperatures. The forced hot air system furthermore allow to thermo regulate the temperature of the product based on the type of fibers that are in process. Also the most delicate fibers can be dried without overheating and without creating damages caused by the high temperature as happens in the traditional hot air dryers.



OUR RF HYBRID DRYER SYSTEM



THE MOST EFFICIENT DRYER EVER CREATED

Sometimes the best ideas are the simplest one. Our hybrid RF dryer is the most innovative combination between our standard RF dryer with the addition of some hot air modules. This new system insures the lowest running costs compared to any other continuous drying system and the best regulation of the drying cycle. As the temperature can be controlled very precisely it is the best solution for the most delicate fibers like cashmere and silk that require a very gentle drying process.

»» **THE WINNING COMBINATION BETWEEN RADIO FREQUENCY AND HOT AIR**

The new Hybrid RF Dryer combines one or more radio frequency modules with hot air modules in order to get the best results. The radio frequency module is used to heat up very quickly the water molecules inside the product while the air modules are needed to complete the drying process with the most precise control and a low temperature.

»» **HIGHLY CUSTOMIZABLE MODULAR SOLUTION**

Our custom modular design allows combining the different RF and air modules in order to meet the strictest requirements of our customers. The machine can be composed by multiple RF modules and multiple air modules that can be combined together to match the drying capacity required.

»» **THE PERFECT SOLUTION FOR THE MOST DELICATES FIBERS**

Thanks to the use of the Radio Frequency combined with the thermo regulated hot air it is possible to control very precisely the drying temperature and select the right parameters for every fiber. The drying process can be easily adjusted to work with the most delicate fibers, insuring a low temperature drying process and an unparallel softness of the fibers at the outlet.

»» **IMPROVED RUNNING COST SAVINGS**

Compared to the traditional RF dryers the new Hybrid RF Dryer allows an additional 30% cost saving in running costs. The much reduced maintenance furthermore contributes to keeping the costs lower and insures production stops are kept to a minimum.

»» **EASY INTEGRATION IN THE CURRENT PRODUCTION LINES**

The machine is designed to be easily integrated into every production line without any difficulty. The use of the optional Siemens PLC system furthermore insures a seamless integration with the other equipment installed in the production line.



OUR LAB EQUIPMENTS

THE HIGHEST TECHNOLOGY IN A SMALL SIZE.

If you need to experiment with new products, drying small batches or just test a few samples of product before moving to industrial production, our lab equipment is ready for you. With a small compact size, very low power consumption and easy to use control panel they are perfect for small laboratories or small production lines. And thanks to the possibility to choose between the continuous or static version we can perfectly fit all your needs.

- **EVEN AND UNIFORM DRYING PROCESS**
With our small lab equipments you can dry products with a thickness up to 20cm in a short time, quicker and more even. As the process is not being affected by external ambient conditions it allows constant work without delays.
- **CONTINUOUS OR STATIC PROCESS**
Our lab equipment is available in the continuous or static version in order to meet different customer's requirements. Either that you need to experiment with new products, drying small batches or just test a few samples of product before moving to the industrial production our lab equipment is the perfect solutions for all your needs.
- **EASY TO USE CONTROL PANEL**
The machine is equipped with a very easy to use control panel in order to simplify the use and minimize human error.
- **DESIGNED TO BE EASILY CUSTOMIZABLE**
The machines are small and compact sizes, insuring an unparalleled production that can be installed in any environment; they are very customized and are more adaptable to the machines in your process.
- **DESIGNED FOR THE EASY INTEGRATION IN THE PRODUCTION LINES**
The lab machines are designed to be easily integrated into every small production line without any difficulty. The use of the optional Siemens PLC system furthermore insures a seamless integration with the other equipment installed into the production line.



SUSTAINABILITY

THE GREEN CHOICE FOR A BETTER WORLD

Our company is strongly convinced in sustaining the environment and our efforts are constant in order to supply solutions with the minimum possible damages to it. Contrary to traditional installations by air which use fossil fuel; in our equipment we use only electric energy, a minimal effect on the environment without emission of CO₂. Furthermore through an accurate design and the use of the XDRY technology we have been able to create equipment that increases efficiency up to 80%. Since it was not enough for us, and after working a long time in order to decrease the costs and consumptions, we have developed the Efficient Synergic technology, exclusively used by RKB, which gives a high performance to be considered the cleanest technology in the sector. RKB gives you a 95% of overall efficiency, warranty for lower costs and excellent production.

CUSTOMER SERVICE

DISTANCE IS NOT A PROBLEM FOR US

RF SYSTEMS is present in more than 54 countries all around the world and can assist you quickly and efficiently. Our technicians are at your disposal anywhere in the world and the supply of spare parts is done with the utmost priority. RF SYSTEMS also includes, in the exclusive Smart Touch panel, an optional remote assistance system, when activated, allows us to verify and eventually modify each setting of the machine in order to ensure the best operating conditions and the maximum efficiency.

There's no better way to dry



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