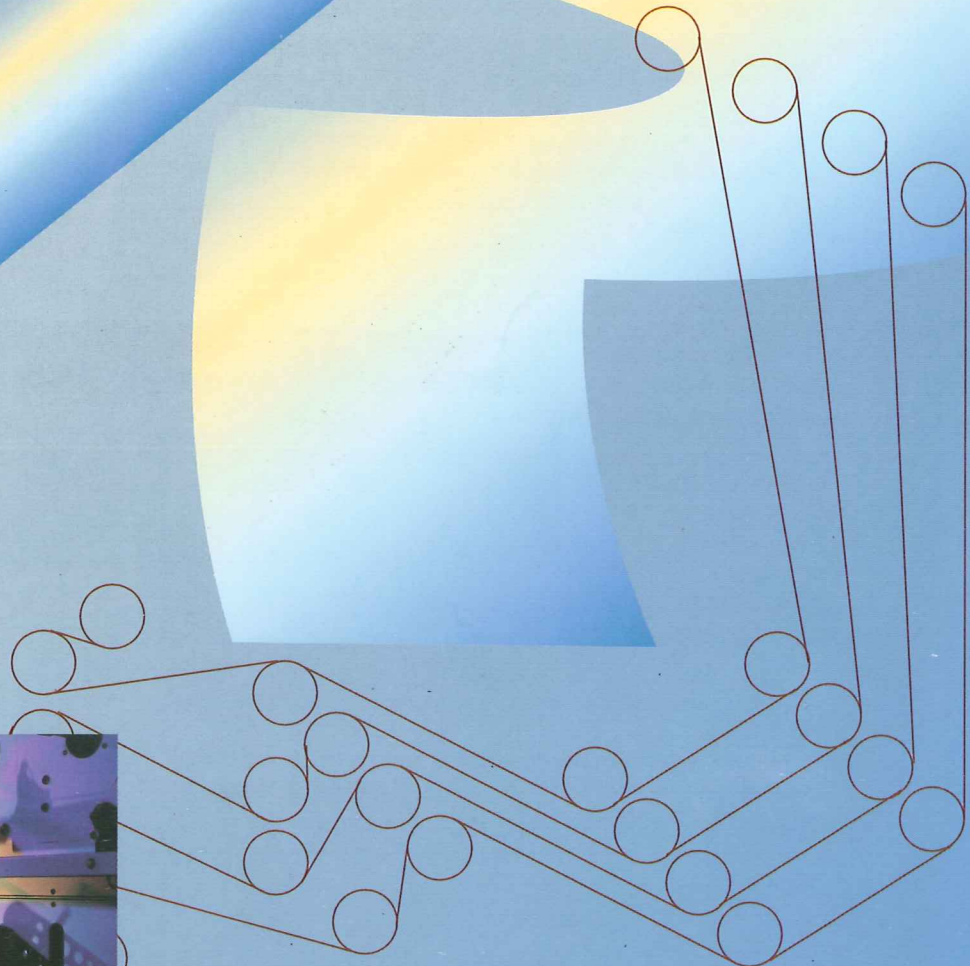
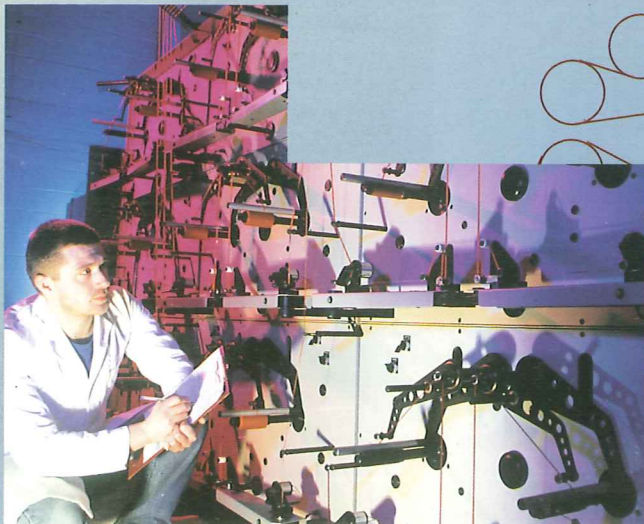


**spooling** ○

*the way to*

**higher productivity** ○



**DR**  
DOUBLE R CONTROLS

## company profile

# DOUBLE R CONTROLS

Double R Controls was founded in 1980, the Company initially manufactured equipment for companies such as ICI and Control Data (Wales) in the field of infra red heating equipment and computer tape certifying. In both cases the products were extremely successful and the Reflective Marker Applicator developed for the computer tape industry was a first and up to that date no equivalent equipment was available.

By 1982, we were heavily involved in the computer tape manufacturing industry and in conjunction with one of Europe's leading slitting machine manufacturers we developed an in-line computer tape certifier, this equipment was a major advancement in tape certification technology. By 1985, it was decided to expand our product range to include rewinding equipment for the packaging industry. In 1990 we decided to expand our rewinding range to include spooling/traverse winding equipment using conventional technologies. It was soon realised that the spooling equipment gave enormous benefits to the user and therefore by 1992 we had developed an innovative and unique system for spooling. It was recognised throughout the world that our principle of spooling was not just novel and technically advanced, but in practice provided facilities no other equipment could.

In 1995 we embarked upon the erection of a purpose built factory having a floor area of 1,750 metres<sup>2</sup> which will more than accommodate all our existing business. The land purchased will enable us to expand this floor area to 2,500 metres<sup>2</sup> in the future. The new premises provided an ideal working environment for our staff and also enhanced the image of the Company. The manufacture of our infra red equipment has also increased to a point where we are now supplying single installations in excess of a megawatt in power and we are recognised as one of Europe's leading manufacturers of quality bespoke equipment.

In 1992 the Queen's Award for Technology was awarded to us for our involvement in Magnetic Media Certification. In 1993 and 1994 we were successful in winning the UK's Electrical Revue Industry's Award for Innovation and the Application of Infra Red equipment. These awards are given for the contribution to the innovative and development of infra red equipment and the application of the infra red equipment in industrial processes.

We supply equipment world wide and have an excellent reputation with our customers for supplying both value for money and technically advanced equipment. It is our policy to continually upgrade the equipment we manufacture and to introduce new technologies as soon as it is commercially viable.



## Spooled product

Manufacturers are demanding more and more from their equipment and higher production rates.

One way to achieve this without any modifications at all to their packaging machinery, is to use material having much longer lengths thus reducing change round time.

Typically five to ten times the normal length can be achieved by spooling a product rather than winding it as a reel or a pancake.

Spooled material can be adapted to run on most packaging machines with minimal modification to the machine.

Many packaging machines use materials over the width range 1.5mm to 120mm and the benefits of using a spooled product can be enormous.

As well as packaging materials there are many uses for very narrow width product such as metallised polyester in widths from 0.18mm to 3mm. Typical applications are in bank notes for security and in the textile industry where a metalised thread is woven to give a special effect to the material or garment produced. We have equipment available which can process product over this width range at speeds up to 500 metres per minute and slitting in excess of 150 threads at a time.

### UNIQUE TRAVERSE AND WINDING MECHANISM

Using novel techniques, developed by Double R Controls, we are able to spool material over the width range 1.5mm, such as tear tape, up to 120mm, such as polypropylene wrapping materials, producing continuous lengths up to 50,000 metres.

As well as spooling flexible materials we are also able to spool non-extensible materials such as paper. These longer lengths ensure that the packaging machines can run continually without stopping, which means that the down time is reduced.



# the way to higher productivity

## TRIM SPOILING

Traditional spooling, or traverse winding techniques, were used to wind edge trims from primary slitting machines where the conventional trim extract system using an air venturi was unsuitable. Trimming material on primary slitting machines has always been a problem, especially if the unwind reel has to be oscillated to reduce the effect of gauge bands.

The normal practice on a slitting machine would use two rewind stations to wind the trim, which is very expensive and prone to trouble. This is an inefficient way of winding trim, especially if it is a narrow width trim that needs to be slit from the edge of the parent reel. However, using twin spooling stations, trims from 20mm upto 130mm can be processed at speeds in excess of 600 metres per minute

depending on the size of the unit being used. It is essential however, that the spooling unit is designed and manufactured to high engineering standards, as typically the conventional

trim removal system is often the cause for downtime when slitting at high speed.



## CORELESS FOR RECYCLING

Double R Controls manufacture a twin spooling system using our unique novel traverse winding mechanism, which actually guides the product onto the rewinding reel, as opposed to forcing it on as per the conventional system. Our technique ensures an efficient controllable spooled reel at widths up to 600mm and diameters up to 500mm. Rewind reel weights in excess of 100kg are often produced.

An additional advantage from the DRC system, is that the roll can be wound coreless and therefore if the product is capable of being recycled it can instantly be fed to the recycling process, without having to remove the core which is time consuming and more the traditional method of winding spooled trim.

This coreless technique also ensures, in a clean room environment, that cardboard is not being introduced which would be detrimental to the environment.

## WIDE RANGE OF MATERIALS

As well as spooling scrap material, such as trim, multi-station machines are manufactured by Double R Controls for winding narrow width product such as tear tape, or any other adhesive and non-adhesive material which is used in both the packaging industry and the cable manufacturing industry. Different materials, whether they be PTFE, paper, polypropylene non-adhesive or adhesive, all require special profiling and lobbing to optimise the wound package.

## COMPUTER CONTROL

The traditional method of using a mechanical traversing system is therefore unsuitable for the more advanced materials used today.

With the advent of computer controlled systems it is now possible to programme the winding profile to suit the particular material being processed. A computer interface is essential to give rapid change-round for processing different materials.

Many spooling profiles are available from the more traditional overlap winding, to a step and repeat winding which can have additional benefits when winding a sensitive material.

The winding technique offered by Double R Controls, not only provides the most optimum winding system, which ensures that the material is not damaged, but also gives the most versatile and efficient operator interface to reduce the change-round time from product to product.

## FAST UNLOADING

When processing multiple spools or bobbins of material the downtime is of paramount importance, it is therefore essential that finished product can be removed from the machine quickly to increase the efficiency of operation. Double R Controls have a number of techniques which have been developed to reduce the downtime. A typical application is when processing 100 spools of 2mm wide tear tape, of a typical length 6000 metres. A run time for a product of this type could be in the order of 40 minutes and, using conventional techniques, to remove the spools from the machine could take an additional 40 minutes depending upon the number of operators involved. However, we have techniques available which can reduce this downtime to less than 3 minutes which significantly increases the productivity of the spooling equipment. The operator's interface

to our machine and the attention to efficiency of operation is always foremost in our designers' mind.

## THE FUTURE FOR NARROW WIDTH MATERIALS

It is our opinion that spooled or traverse wound product is the way ahead for the future processing of narrow width materials and it is essential, with the sensitivity of these materials, that the techniques



used are optimised to ensure that no edge damage occurs to the material during the winding process, otherwise the next process using the spooled product will suffer.

## CONCEPT PROOF BY DEMONSTRATION

Equipment is available from Double R Controls to demonstrate, at your premises, the techniques we use and the versatility of these techniques, with complete computer interface for setting the winding parameters to optimise the tensions and profile of the finished spool. By having test and demonstration equipment available which will interface with conventional slitting and rewinding machines, processing your products proves the efficiency of the equipment we manufacture and the techniques we advocate.



## Typical Applications for high productivity spooling

With the novel and unique techniques advocated by Double R Controls, we have been able to spool product over the width range 1.5mm to 100mm depending on the particular equipment supplied. It is possible to spool rigid material such as paper down to thin foam materials, without creating excessive distortion in the material which will ultimately render it unsuitable for its application. Adhesive tapes manufactured from polyethylene, polypropylene, polyester, pvc and paper have all been wound successfully using our novel technique, which in creating longer lengths allows the next process to run without stopping for an increased time.

We have techniques available which will process specialised product over the width range 0.18mm to 3mm and typical applications are the processing of thin metallised polyester materials. These materials are used in bank notes for security purposes and textile garments to give special effects. Products of this type are processed at speeds in excess of 500 metres per minutes and typically 150 bobbins are wound at a time. When processing this quantity of products the downtime is of paramount importance and therefore special attention has to be made to the technique involved as far as the removal of the finished bobbins is concerned.

The range of products that can be processed in a spooled format is expanding daily. We believe that virtually any narrow width product can be processed using our spooling techniques and we welcome the challenge of being provided with new materials to be spooled. With the facilities available at Double R Controls, we can provide samples of your product spooled to enable it to be evaluated.

The spooling machines manufactured by Double R Controls are split into two main sections, the unwind slitting section and the rewind spooling section. The unwind section of the machine is an important part of the process, although we can supply the rewind spooling stations to operate in line with existing slitting machines. The unwind supplied by Double R Controls can incorporate coating and printing stations to enable product being produced to have additional processes incorporated, in line with the spooling. This technique is particularly advantageous where a thick bead or coating is being applied to the material. The advantage of printing or coating in line reduces the number of external operations and ensures the correct registration of the coating or printing prior to slitting.

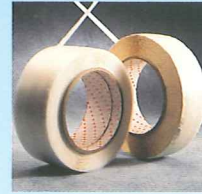
As an additional service, Double R Controls can supply a wide range of de-spooling units to dispense the spooled product. We also offer an advisory service to our customers to optimise the de-spooling process.

FOR MORE INFORMATION CONTACT:

# DOUBLE R CONTROLS

## Typical Products

### Siliconised Tape



Siliconised high density polyethylene, paper and polypropylene are extensively used where a permanent and re-sealable bag closure is required. The tape is removed to expose the adhesive to enable the seal to take place.

### Tear Strip



Tear strip tapes are specially formulated for use in the corrugated industry and are used as an opening tape for the corrugated or cardboard packing. Typically spools of tapes from 4mm wide in lengths of 30,000 metres are used.

### Tear Tape



Tear tapes which are manufactured from MOPP film are normally coated with a pressure sensitive adhesive and are available in widths from 1.6mm up to lengths of 50,000 metres on a single spool. These tapes have many applications and major uses are for the opening of cigarettes, biscuits, and the audio video tape packages.

### Polythene Tape



A range of polyethylene tapes are available and because of its low yield point, it is extensively used in sealing packages to create a relatively simple tamper evident seal, as well a moisture barrier seal. Typical applications are tins of biscuits and sweets.

### Double Sided Tapes



A wide range of double sided tapes are used throughout industry, especially when one product has to be adhered to another. The techniques when winding double sided tapes are sophisticated as you have to ensure that no offset or picking of the adhesive on the tape takes place.

A wide range of narrow width products can be processed which are wound onto a plastic bobbin as opposed to wound as a flangeless spool. Applications include the metallised polyester tapes used in bank notes and in the textile industry.

### Foam Tape



Due to the precise tension control and spool winding techniques offered by Double R Controls, a full range of adhesive and non adhesive foam tapes can be processed, which dramatically increases the length of product available in one package.

### Bag Sealing Tapes



These tapes are extensively used for the neck sealing of bags containing food, our major user of this tape is the bakery industry.