DIRECT FIRED GAS OVEN
THE BRITISH ALTERNATIVE FOR BAKERY EQUIPMENT

DIRECT FIRED GAS OVEN

OUR NEW DIRECT FIRED GAS OVEN IS DESIGNED TO BAKE THE COMPLETE RANGE OF BISCUITS, CRACKERS & COOKIES, COMBINING THE GREATEST CONTROL & FLEXIBILITY.

- Modular construction for easy installation
- Clean out doors fitted in every module on non-burner side
- Insulation is of the highest specification, sidewalls (300mm) crown (400mm)
- Airtight baking chamber
- Trizone burners to ensure precise lateral heat balance
- Each modular section has transverse ducting ports which guarantee even extraction across the width of the oven band
- Temperature control in each zone to give the greatest accuracy and flexibility
- PLC controlled with recipe storage facility
- UPS as standard in the event of power failure

MANUFACTURING | INSTALLATION | COMMISSIONING | PRODUCT DEVELOPMENT | AFTER SALES & CARE
HEAVY DUTY BASE FABRICATION
Manufactured to support increased oven insulation layers for oven base and sides.
Thermal heat blocks installed to reduce heat transfer into the oven base layer.

INTERNAL CHAMBER
Structural build showing pre-welded chamber modules positioned onto base frame for correct alignment.

INTERNAL CHAMBER EXTERNAL VIEW
Structural build showing fully insulated base layer and thermal blocks.

FIRST LAYER INSULATION
Control side of oven shown with High Density Insulation fitted. This first layer is permanently fixed so there are no thermal gaps for heat loss to occur. Our insulation fixing methods are tried and tested with outstanding thermal heat absorbing properties resulting in minimal heat loss from the oven while in operation. Many years of testing insulation, have resulted in a high performance thermally protected oven.
SECOND LAYER INSULATION

Showing burner fixing pots laterally fixed together. This feature ensures the burners are horizontal and vertically stable to each other and the oven band. Ensuring burner stability horizontally guarantees the even heat distribution across the product on the oven band. Chamber side distortion is kept to a minimum due to this feature.

INTERNAL VIEW

The burner rails aid easy removal of the burner for maintenance. Cleanout door aperture is manufactured flush to the chamber base for easy removal of product debris build up, this can reduce the risk of oven fires.

CHAMBER PLAN VIEW

View showing fully insulated roof explosion relief boxes.

EXTRACT DUCT TOP VIEW

Maintenance hatch for easy access to oven extraction damper.
1 NON OPERATOR SIDE VIEW

Showing pullout cleanout door fitted on non-control side of the oven. The doors are fully insulated with an inner door completely sealed against heat loss. These doors are fully removable along with the inner door for complete access into the baking chamber for cleaning and maintenance of oven band support rollers or bars.

2 DAMPER CONTROLS

Showing operator manual damper extraction control. Each 2.1M oven module has provision for a damper control point. Generally these are preset with no access for adjustment or maintenance, but we have introduced these with great success giving the operator total control of the baking process especially when producing multiple products in one oven.

3 FLYNN BURNERS INSTALLED

All 2.1m module oven sections come pre installed complete with:
1. Gas and air header supply pipe work.
2. Flynn Gas Burners fitted and connected to supply headers.
3. Electrical solenoids and shut off valves.
4. Electrically pre wired burner control system (Flynn Bake Net).

4 CONTROL PANEL

Each module is ready to install upon site arrival and greatly reduces the installation time and costs to the customer. Extending similar existing oven lengths is also possible with this easy install system.
DIRECT FIRED GAS OVEN

Nominal band widths:
- 1000mm - 1200mm - 1500mm

Module lengths:
- 2100 mm pre wired and assembled with pipe work

Fuel type:
- LPG or natural gas

Insulation type:
- High density mineral slab wool

Insulation thickness:
- Roof – 350mm
- Sides – 350mm
- Base – 125mm

Flush level cleanout doors:
- Every 2.1M module

Product inspection doors:
- One per zone

BAKING CHAMBER

Chamber body:
- Low emissive aludip walls and floor to resist corrosion and prevent side radiation from edge colouring.

Explosion relief boxes:
- 2 per module – fully insulated

Burner support rails:
- Easy removal and installation of burners

Extraction:
- Full width (to ensure lateral heat balance across band)

Multi point:
- Manually adjustable across 2.1M module as standard

Sealing joint:
- Fully bolted and clipped together to prevent heat/moisture loss

Belt/band supports:
- Cast iron skid bars (suitable for most bands)
- Rollers – used for heavy bands on long ovens
- Graphite bars (used on steel band ovens)

Delivery end drive terminal:
- Heavy duty drum profile manufactured to suit oven band type to allow accurate tracking and extend belt life

Feed end terminal:
- Heavy duty drum profile manufactured to suit oven band type to allow accurate tracking and extend belt life

Tension system:
- Pneumatic twin cylinders – 10 bar

Tension slide:
- Rack and spur gear for accurate and consistent movement

Tension alarm:
- Tension pressure monitored, rotation sensor for belt slippage

Band wander alarm:
- Inductive sensors fitted each side of the band to monitor band movement

Return band rollers:
- One roller per leg with big support brackets

OPTIONS
- Oven preheat zone
- UPS emergency windout
- Stainless steel outer covers
- Return band side covers
- Band cleaner
- Radiant burners

Burner Ignition Systems

1. TRI-ZONE ADJUSTABLE
   - BTU rating 80,000 BTU nominal for 1½” pipe.
   - BTU rating 160,000 BTU nominal for 2” pipe.
   - Individual near, intermediate and opposite adjustment.
   - Direct replacement for existing similar styles.
   - Suitable for use with natural gas, propane and butane.

2. PIPE RIBBON BURNER SCHEDULE 80
   - Flynn Pipe Burners are widely used for baking breads, cookies, crackers, snacks etc. These burners provide exceptional flame retention and uniformity at both low and high fire.
   - Pipe burners can be manufactured in any length and in diameters of 1½” – 3½. The ribbons are constructed of stainless steel and can be configured in many different patterns to achieve the desired capacity.

AT RKL WE ARE EXTREMELY PROUD OF THE OVENS WE MANUFACTURE USING THE BEST QUALITY MATERIALS AVAILABLE ON THE MARKET. WE HAVE A LONG STANDING RELATIONSHIP WITH FLYNN BURNER CORPORATION TO SUPPLY OUR BURNER IGNITION SYSTEM OR BAKENET™.
BakeNet™ was first conceived in 2005 and has since been developed into a complete baking solution. It comprises of a proven industrial, open source network and machine mountable IO.

It was originally aimed at replacing a DSI system (Direct Spark Ignition) rapidly, thus reducing production downtime to an absolute minimum and allowing replacement of a complete system within the normal production constraints of a modern day bakery. Enhancements now provide benefits on maintenance, production and corporate levels while remaining cost effective.

BakeNet™ is the operating software which provides quality improvement and return on investment by actually saving on annual gas consumption yet delivering improved product quality.

The DSI systems (Direct Spark Ignition) on industrial ovens have grown and evolved over the years to become key to the quality, efficiency and control of the today’s baking process.

Oven operating systems being offered today claim energy efficient, product-enhancing features with simple user interfaces. How many systems can actually live up to this claim?

DEFINITION:
A BURNER CONTROL AREA NETWORK ON INDUSTRIAL OVENS

More and more bakeries are turning to our innovative approach in dealing with age old problems. Combining a new approach with in-depth process knowledge, BakeNet™ provides a complete solution for new ovens, upgrades or modification to existing systems.

Absolute, minimal downtime for installation does not even begin to compromise the cutting edge control buried deep within a simple, operator friendly, baking solution. BakeNet™ provides features which, to date, have been unavailable; blown fuse or module failure detection, manual override indication, failed flame count and duration as well as the standard flame failure detection.

OUR APPROACH DOES NOT END AT INSTALLATION.

Using the Air/Gas Ratio Analyzer, (AGRA) we can take your ovens to a efficiency, quite simply, unmatched within the industry. For a standard, constant ignition oven, we can usually achieve an annual saving of up to 25% in gas consumption and on a “new” system we can often improve efficiency between 4-6% over and above anything obtained before.

Being unique in the industry, we offer services to take your oven closer to “perfect combustion” and lower energy usage. The energy savings alone, should, in nearly all cases, provide the return on investment needed to justify the cost of upgrading your oven.

Together with the energy saving technology is our process knowledge. Proven in leading bakeries, our software provides unrivalled active product tracking reducing changeover times to a minimum.

Gap Control eliminates flash heat between changeovers and natural product gaps by reacting before a load change is normally detected. Recipe control, progressive cutback, enhanced, cascading PID control, batch reporting are some of the features that are establishing Flynn as the industry leaders in providing the only, currently available, complete baking solution.
RKL engineering was incorporated in 1981 to provide a skilled workforce to a number of the major biscuit manufacturers for example McVities, Fox’s, Jacobs, Burtons and Cadbury’s. The company confined its operation to the U.K. until 1982 when McVities were disposing of their old Digestive Plant. We removed the complete line and sold it to a biscuit maker in Venezuela. This was followed up in the same year with sales to Australia and Bangladesh.

In 1983 we sold a complete Cream Cracker line to a customer in South Africa who was just starting out in the Biscuit Industry. During the next five years, that same customer came back to us for four more complete lines of plant.

In 1986 the Co-operative Wholesale Society closed their biscuit making factory in Manchester and we bought all nine lines of plant. By 1991, we had sold every one of these and were now well and truly established suppliers of high quality second hand biscuit machinery. Demand for our unique service was high as there were few who could supply what we could provide.

The year 2006 marked another milestone in the history of RKL Engineering. It was in this year that we were commissioned to build a new oven which would produce crackers sold under the Tesco own label banner.

As a company we have never found it necessary to advertise as the majority of our business comes from recommendations and repeat sales to satisfied customers. We do not have a sales force because we believe our machines are our salesmen. When a customer has one of our plants running satisfactorily, then it speaks for itself.

Most of the plants we supply today, in particular the ovens are all brand new. Over the years we have found that British made machinery has earned itself the reputation of being the best in the world. Built to very high standards, these machines really do stand the test of time and it is this dedication to quality that has inspired us to design and build our own ovens.