

MICROBLADE LIMITED

CIRCULAR MACHINE KNIVES



Since the inauguration in 1975 of Microblade we have gained an international reputation for high quality blades, efficient personal service and competitive prices. Modern engineering practice combined with traditional skills enables our factory to produce circular knives up to 24" (610mm) diameter in a wide range of specifications and materials. Typical applications are for slitting paper, soft tissue, cardboard, textiles, rubber, plastics, synthetic materials, cork, foodstuffs and associated products.

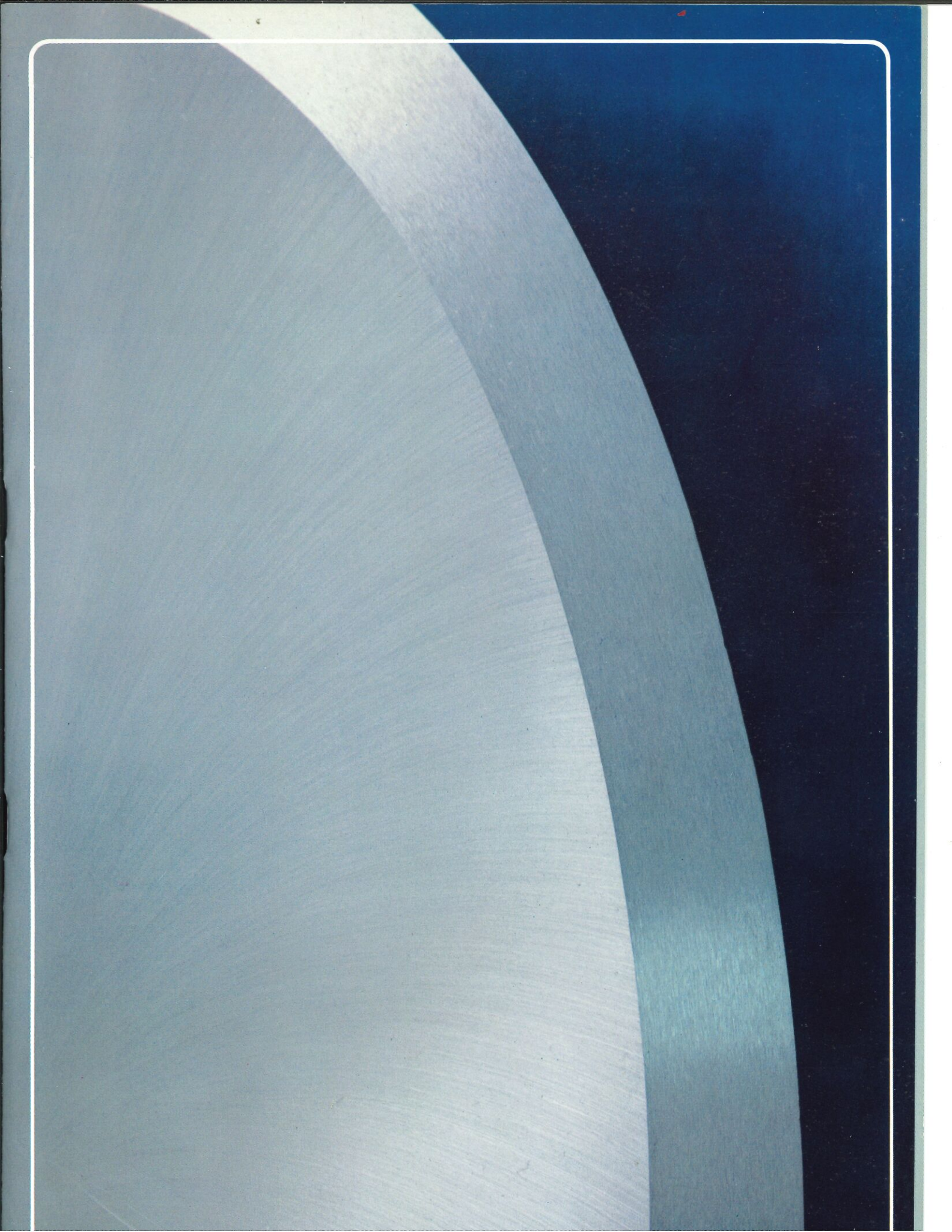
The Sheffield factory is fully equipped to produce a complete range of knives to standard and customer's specifications, our ability to perform all the manufacturing operations in our own factory ensures that the highest degree of control both in quality and delivery is maintained. Steel sheet is stocked in popular sizes and specifications, again enabling Microblade to meet your delivery schedules without embarrassment, and to manufacture those special items within reasonable time limits.

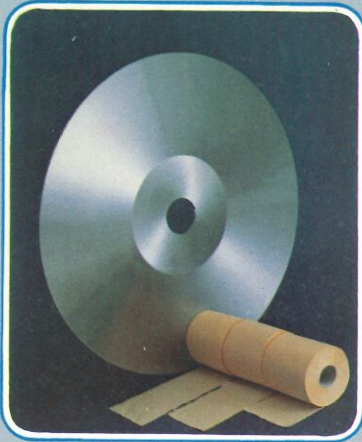
We hope the following photographs and technical data will illustrate how proud we are of our manufacturing unit, the products we make, and the specialists we employ. As suppliers to some of the largest paper makers in the world we are constantly aware of the responsibility placed upon us with every order we receive. To our present customers thank you for your continued business, to our prospective customers, examine the range we can offer then let us prove to you that our machine knives, service and reliability are bred from the finest Sheffield traditions. And that our products justifiably carry the guarantee of quality that has become so well known throughout the world "Made in Sheffield, England".



Richard Kirkham

RICHARD KIRKHAM
CHAIRMAN



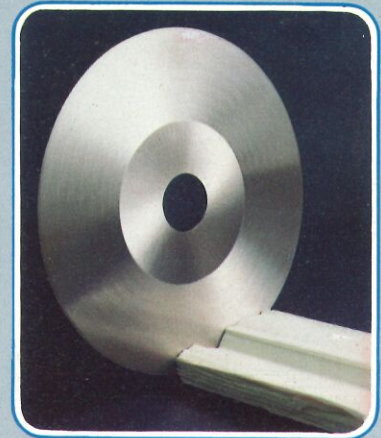


ORBITAL LOG SAW BLADES

Manufactured and perfected by Microblade over many years and now an adopted standard in our production range. These Orbital Log Saw blades are manufactured to exacting tolerances in order to give long life and trouble-free running in soft tissue conversion. Particular attention is paid to the final axial run-out of the knife with a normal standard tolerance of ± 0.10 mm (0.20 mm T.I.R.) for alloy blades and ± 0.075 mm (0.15 mm T.I.R.) for high carbon - high chrome knives.

All the below listed blades can be made from three stocked steel qualities which are chrome, alloy, chrome tungsten, and high carbon -high chrome. Also available in $\varnothing 21''$ (533,40 mm) and single bevel combinations.

All bevels are polished to a very high surface finish to reduce friction and heat as an aid to efficient slitting performance.



STANDARD PRODUCTION (PHYSICAL DIMENSIONS)

1. $\varnothing 24$ (610 mm) x $\frac{3}{16}''$ (4.76 mm) x $\varnothing 2\frac{1}{16}''$ (68,26mm) Bore x $7\frac{1}{2}''$ (190mm) Double Bevel.
2. $\varnothing 24''$ (610mm) x $\frac{3}{16}''$ (4,76 mm) x $\varnothing 2\frac{1}{16}''$ (68,26mm) Bore x $9''$ (228mm) Double Bevel.
3. $\varnothing 24''$ (610 mm) x $\frac{3}{16}''$ (4,76mm) x $\varnothing 2\frac{1}{16}''$ (68,26mm) Bore and 4 Equi-spaced Drive Holes each $\varnothing \frac{11}{32}''$ (8,50mm) on a $4''$ (101,60mm) P.C.D. x $7\frac{1}{2}''$ (190mm) Double Bevel.
4. $\varnothing 24''$ (610mm) x $\frac{3}{16}''$ (4,76mm) x $\varnothing 2\frac{1}{16}''$ (68,26mm) Bore and 4 Equi-spaced Drive Holes each $\varnothing \frac{11}{32}''$ (8.50mm) on a $4''$ (101,60mm) P.C.D. x $9''$ (228mm) Double Bevel.
5. $\varnothing 24''$ (610mm) x $\frac{3}{16}''$ (4,76mm) x $\varnothing 3\frac{1}{4}''$ (82,55mm) Bore and 4 Equi-spaced Drive Holes each $\varnothing \frac{7}{16}''$ (11,10mm) on a $4\frac{1}{4}''$ (108mm) P.C.D. x $7\frac{1}{2}''$ (190mm) Double Bevel.
6. $\varnothing 24''$ (610mm) x $\frac{3}{16}''$ (4.76mm) x $\varnothing 3\frac{1}{4}''$ (82,55mm) Bore and 4 Equi-spaced Drive Holes each $\varnothing \frac{7}{16}''$ (11,10mm) on a $4\frac{1}{4}''$ (108mm) P.C.D. x $9''$ (228mm) Double Bevel.
7. $\varnothing 24''$ (610mm) x $\frac{3}{16}''$ (4,76mm) x $\varnothing 60$ mm (2,362'') Bore and 4 Equi-spaced Drive Holes each $\varnothing \frac{7}{16}''$ (11,10mm) on a $4\frac{1}{4}''$ (108mm) P.C.D. x $7\frac{1}{2}''$ (190mm) Double Bevel.

FACIAL TISSUE KNIVES

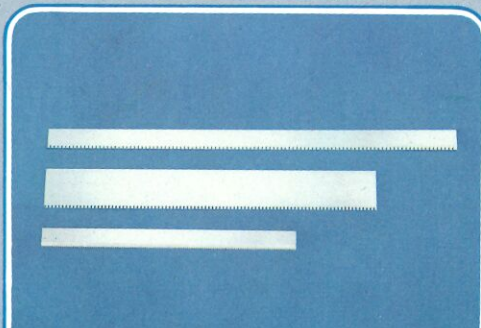
Manufactured from the same materials and to the same exacting standards as the Orbital Log Saw blades, these knives are designed to give constant performance either when used singly or in a gang. They are stocked in the standard sizes listed below and can be made to customer's own specification with drive hole combinations and differing bevel lengths as required.

1. $\varnothing 16''$ (406,40 mm) x $\frac{1}{8}''$ (3,17 mm) x $\varnothing 2\frac{1}{16}''$ (68,26 mm) bore x $4''$ (101,60) Double bevel.
2. $\varnothing 18$ (457,20 mm) x $\frac{1}{8}''$ (3,17 mm) x $\varnothing 2\frac{1}{16}''$ (68,26 mm) bore x $4''$ (101,60) Double Bevel.

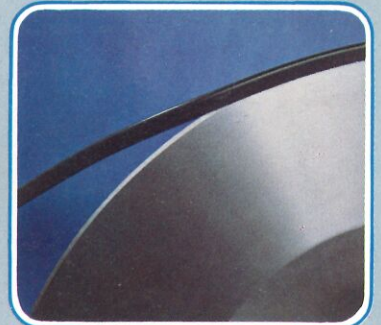
PERFORATOR & CHOPPER KNIVES - TOP AND BOTTOM SLITTERS

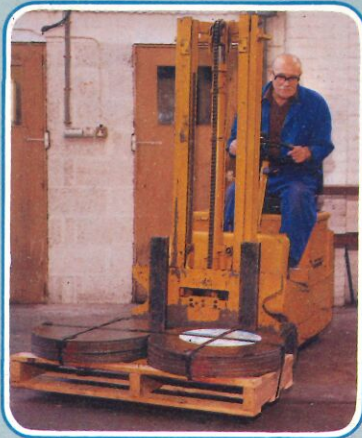
As a complete service to the paper conversion industry we supply and stock many popular sizes of top and bottom slitters, crush cutters, scorers, perforators, multi-bottom knives, knifeholders etc. and the photographs below show some of the range we can supply.

For regular users we offer a stocking facility in our Sheffield factory avoiding extended delivery times. Blades can be supplied in alloy steel, high carbon - high chrome, or high speed steel. The top dished knives shown have been treated on the cutting edge with tungsten carbide to extend life when cutting difficult materials.



ALSO AVAILABLE IN 21" DIAMETER (533, 40mm) AND IN SINGLE BEVEL SPECIFICATIONS





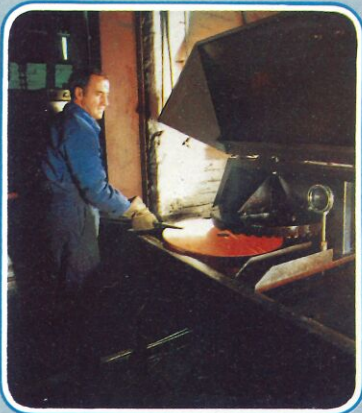
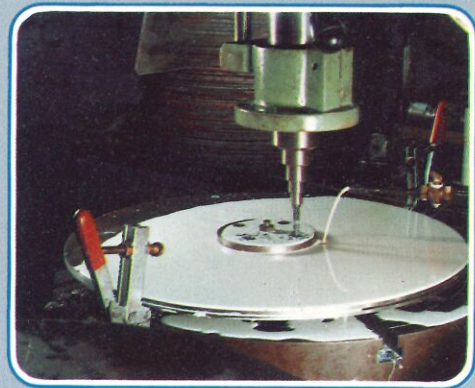
RAW MATERIALS

Careful selection of steel and other consumables is of prime importance in order to produce consistent high quality blades. For each item we purchase we have alternate sources of supply with draw off stocks in the U.K. to ensure continuity of supply in cases of difficulty with one supplier. Steel is stocked both in disc and sheet form, this coupled with our own rotary shearing facilities enables us to react very quickly to customers' requests for special and non stock items.



MACHINING

Dimensional accuracy must start at the beginning therefore we machine the bore and the outside diameter on all blades and in the case of drive holes being required these are jig drilled as shown in the photograph. Keyways, slot holes and special shaped bores are all produced by milling ensuring an accurate fit onto the slitting machine spindle.



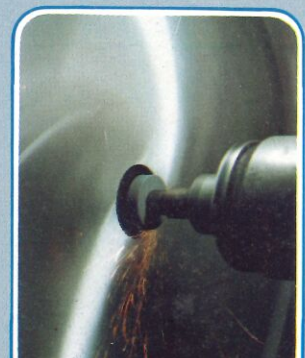
HEAT TREATMENT

The complete cycle of hardening and tempering is carried out in our own factory using special purpose equipment built to our own design and ensuring that hardness is evenly achieved throughout the full area of the knife.

Flatness, rigidity and durability are all vitally important for ultimate knife performance. A full martensitic structure must be achieved after hardening and a careful regular check is kept on the blades as they complete the heat-treatment cycle. Hardness is tested as shown using the Rockwell 'C' scale.

BORE GRINDING

Centre holes are normally produced to I.S.O. H7 tolerance and over 1" diameter (25,40mm) are all finish ground to size.

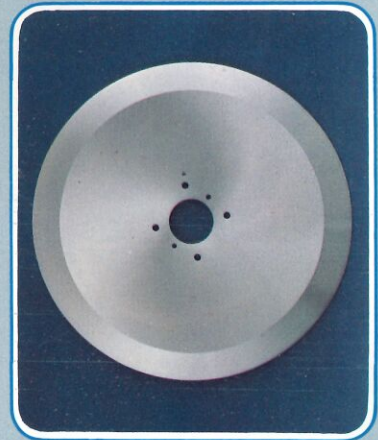


RUBBER & ASSOCIATED INDUSTRY

Circular knives used in these industries have to withstand very high cutting forces due to the dense nature of the material to be cut. Many instances demand high carbon - high chrome and high speed steels in order to combat the heavy abrasion of the materials. Heat generation and product adhesion are problems that have to be overcome by strict attention being paid to surface finish and axial run out.

The top left hand photograph shows two high carbon steel rubber slitting knives with bossed centres and also a high speed steel banner bias knife. The top right photograph shows the standard skiver knife used in tyre tread slitting, this is stocked in two standard sizes and can be manufactured to customer's own specification.

1. \varnothing 20" (508mm) x $\frac{1}{4}$ " (6.35mm) x \varnothing .2 $\frac{3}{4}$ " (69,85mm) bore single bevel.
2. \varnothing 16" (406,40mm) x \varnothing .330 (9,07mm) x \varnothing 2 $\frac{3}{4}$ " (69,85mm) bore single bevel.



CARDBOARD PRODUCTION

Demands all the skills of the machine knife manufacturer in producing the intricate shapes and designs that the slitting and creasing machinery requires. Toothed and plain, full and split diameters, double, single and internal bevels all with consistent hard wearing properties Microblade can meet your every demand both in stocked and special production.



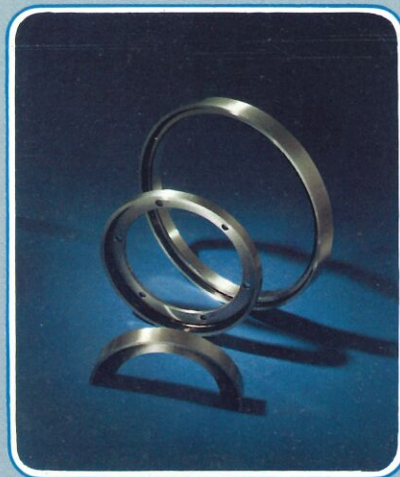
TEXTILE AND FABRICS

Strip cutter blades, crush cut knives and hand cutter circulars are all made and stocked in our factory. These are all manufactured from chrome alloy steel heat treated to 59-60 H.R.C. ensuring a long life and a cutting edge that will not break down during heavy use. We have supplied the textile industry with circular knives since the Company was formed and have details on all the machines used and stock the majority used.



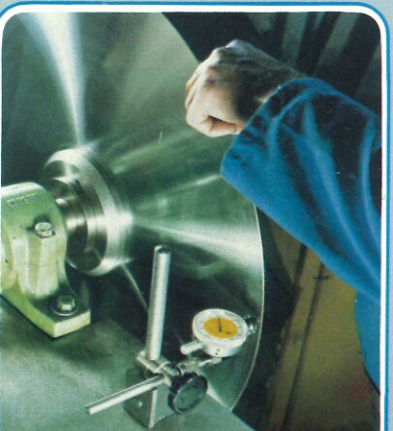
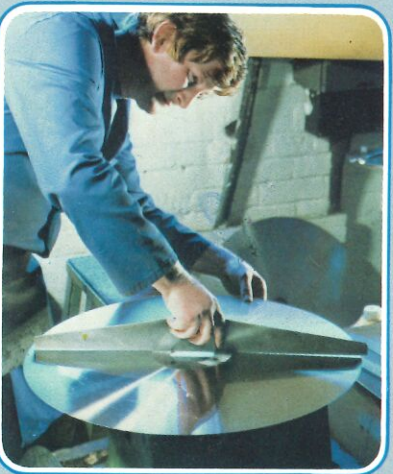
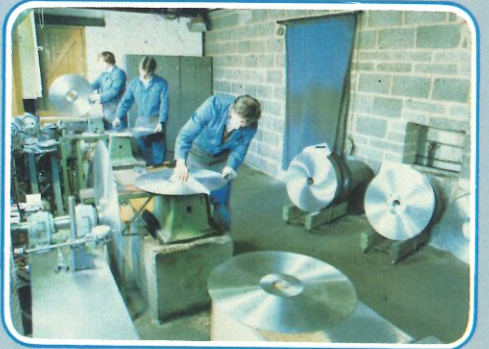
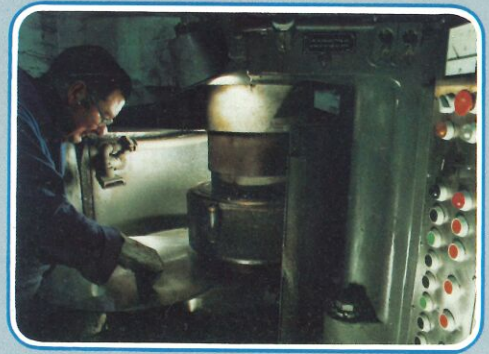
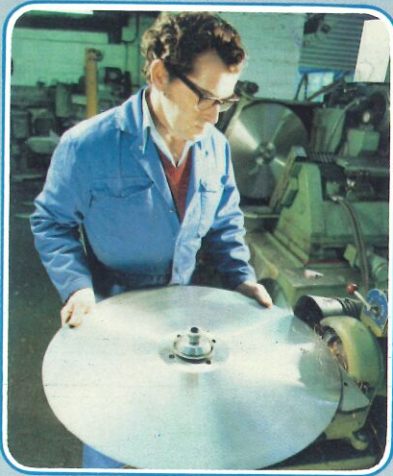
OTHER APPLICATIONS & SPECIAL KNIVES

Since commencing production in 1975 we have manufactured and supplied circular knives for cutting asbestos, bitumen, felt, plastic sheeting, brush materials, foam, adhesive tapes, draft excluder, rubber extrusions, brake linings, fibreglass carpet, leathers, cork, sacks both in hessian and paper, laminates, veneers, aluminium and brass foil, cigarettes, vegetables, fish, poultry, confectionery and many other materials. Our manufacturing unit is equipped to manufacture for special items quickly and efficiently with the minimum of effort from you our customer.



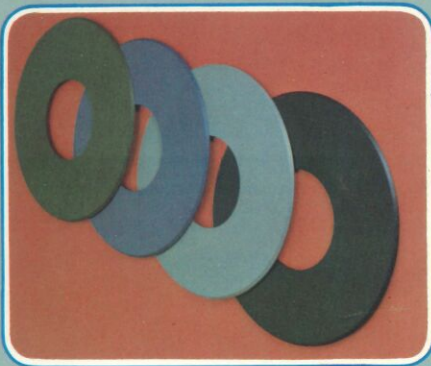
GRINDING AND SMITHING

After the heat-treatment operations have been completed the grinding cycle starts with the centre hole being ground to the finished size, the blade is now hand smithed flat, this being the first of four hand flattening operations designed to ensure that the knife will retain its operating tolerances throughout its life. Flat grinding and bevel grinding operations are performed on some of the most advanced machinery available today ensuring perfect parallelism and dimensional accuracy together with a high degree of surface finish. The periphery of the blade is ground after bevelling to ensure that the blade will run perfectly concentric to the bore during use thereafter the final grinding operations commence to produce the final surface finish which reflects only the high degree of workmanship that experience breeds.



The final sharpening angle is ground onto the blade and before they are packed into wooden cases they are finally tested for axial run-out as shown.



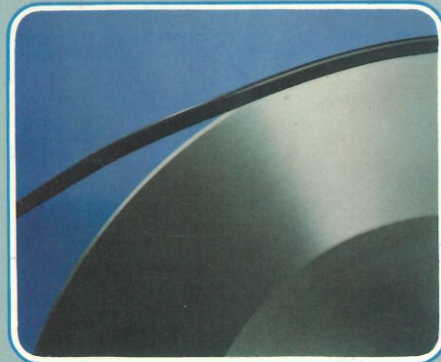


ALTERNATIVE SURFACE FINISHES

We offer a complete coating service for special applications. For the food industry we can supply an F.D.A. approved coating that in many cases can successfully replace the traditional stainless steel knife. This means that the blade can be manufactured from a carbon chrome steel, 20% harder than the stainless steel, then coated to prevent food adhesion and corrosion. The result, better performance from the blade with equal hygienic properties.

Coatings can be used to prevent product adhesion when slitting adhesive backed tapes, bitumen based materials and other difficult materials.

We offer a full technical service when selecting the most suitable coating for your own application.



OPERATOR/EDGE PROTECTION

Fitting Orbital Log Saw blades and facial knives to the actual converting machinery can be a hazardous operation. The exposed sharp edge can and has caused many serious accidents and therefore as part of our development policy a solution has been found to this problem.

A thermoplastic rubber extrusion is fitted to the cutting edge as shown in the photograph, which can remain in position until the blade has been mounted; the final operation being to remove the rubber before operating the machine.

PACKING & DISTRIBUTION

Protective rubber edge moulding, water resistant paper and wooden packing cases ensure that the blades reach their destination in good condition. Using a reliable network of hauliers both within the U.K. and abroad, shipments are delivered with the minimum of delay. In the event of haulage problems or goods being required immediately then we have our own transport readily available.

Full export documentation is carried out in our own office enabling consignments to be sent F.O.B., C.I.F. airfreight or container freight at our customer's request.



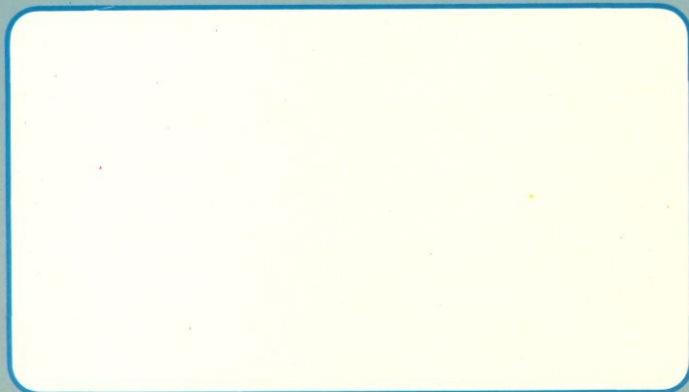
COMMUNICATIONS

Being on direct telex means our office is open for 24 hours each day and our telephones are manned from 0800 to 1730 hours Monday to Friday. All customers' orders that we receive are immediately acknowledged by telex or post, keeping our customers informed is a principle that we have always adhered to.

We offer a personal and efficient service with high quality products ... we look forward to being of service to you.



Presented By:-



MICROBLADE LIMITED

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MANUFACTURERS OF:-

PAPER CONVERTING KNIVES, ORBITAL LOG SAW BLADES, TOP & BOTTOM SLITTERS, ALL TYPES OF CIRCULAR KNIVES