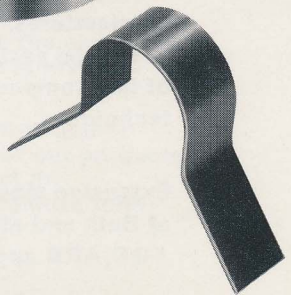
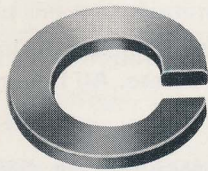
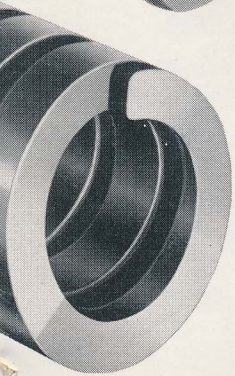
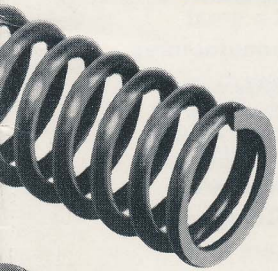


CROSS

SPECIAL

SPRINGS



CROSS

The Cross Manufacturing Co. (1938) Ltd. was founded by the late Roland Cross, F.I.Mech.E., A.F.R.Ae.S., inventor of the "Cross" Rotary Valve Engine and the Linerless Alloy Cylinder. It has two factories, one in Bath and the other in Devizes, Wiltshire, and employs about 190 people.

The main products are metal sealing rings and piston rings and "Cross" Wire Thread Inserts. In addition the Company carries out a great deal of development work and also manufactures spring washers for aircraft use, circlips, retaining rings and springs.

Most of the springs which are produced are made for special applications. The Company is particularly interested in springs where high accuracy is demanded or those which make use of unusual or exotic materials. Considerable experience has been acquired in the design and manufacture of springs for use at high temperatures. In addition springs of rectangular or special sections can be made by making use of the Company's specialised wire rolling techniques.

Extensive stocks of wire are maintained both at Bath and at Devizes. All this material is AQD/ARB approved.

The Cross Manufacturing Co. (1938) Ltd. offers top quality in spring making, quick and reliable deliveries and expert design service.

Types of springs made

COMPRESSION, TENSION AND TORSION COIL SPRINGS

All kinds of springs are made to customers' drawings or specifications.

A wide range of wire is held in stock which enables us to provide springs at short notice for all normal requirements, and for parts where corrosion and heat are a problem.

In addition to standard round section wires, we have our own plant for producing other sections which are sometimes necessary to meet special design considerations.

Springs from .030" dia. x .100" long and up to 5" dia. x 10" long can be supplied in wires from 30 to 4/0 SWG.

Suitable material can be selected from the stock range given below:

Spring Steel S201 (DTD 215) (similar to EN.49)	6 to 30 SWG
Spring Steel S203 (DTD 239) (similar to EN.42)	4/0 to 30SWG
Stainless Steel S205 (DTD 5006) (Austenitic type similar to EN.58)	8 to 30 SWG
Stainless Steel DTD 326 (Martensitic type similar to EN.56)	3 to 30 SWG
Phosphor Bronze BS.384	10 to 30 SWG
Heat and corrosion resistant Steel Nimonic 90	10 to 26 SWG
Heat Resistant Steel 14% Tungsten Alloy	6 to 24 SWG
Beryllium Copper	14 to 30 SWG

Other materials available on request.

STRIP SPRINGS

Flat or formed springs can be supplied in various materials ranging in thickness from 30 SWG to $\frac{3}{16}$ " thick and up to 4" wide by 10" long. Small batches of springs in beryllium copper and spring steel are regularly produced for a variety of applications. They can be either hand made or produced from short run press tools made in our own Toolroom.

Heat resisting and stainless materials are available where necessary.

DISC SPRINGS (Belleville washers)

High quality washers made in spring steel and beryllium copper from .010" to $\frac{1}{4}$ " thick up to 8" dia.

Matched sets can be supplied and containers may be provided where preload is desirable.

RING SPRINGS

These springs consisting of "Cup and Cone" rings in a stack provide high loads in confined spaces and have considerable damping properties.

Units can be specially designed or made to customers' drawings.

Spring making capacity

We are able to offer a service for the design and manufacture of all types of springs required in small quantities for development work and general applications.

Our own Drawing Office and Toolroom is able to design and develop special production equipment for products which cannot be made on standard spring making machinery. New spring forming methods are regularly being evolved to meet the needs of modern industry.

Surface treatment

Cadmium, nickel and phosphate finishes may be applied by our own plating department which operates Ministry approved processes for high tensile steels and non-ferrous materials.

Quality control

Normally we only use aircraft quality materials which permits us to fully release the springs we manufacture in accordance with Ministry requirements.

Our Inspection Dept. exercises full quality control during the manufacture of our products, and our inspection facilities meet the requirements of the following organisations:

Ministry of Technology.
Registration Board.
IFVE.
Ministry of Defence.

D.Q.A.B. and C.A.A. APPROVED

CROSS Mfg. Co. (1938) Ltd

COMBE DOWN . BATH . SOMERSET
Tel: Combe Down 837000 Grams 'Circle Bath'

