LARGE DIAMETER METAL SEALS
FOR HOT & EXTREME CONDITIONS

- Sizes to 6ft 3ins (1900 mm) Dia. in regular production
- Larger Diameters Possible
- Temperatures in operation up to 800°C (1470°F)

FOR USE IN:
- Power Stations
- Steam Turbines
- Gas Turbines
- Special Purpose Rigs
- Liquid Metal Cooled Reactors
- Chemical Industry
- Food processing

Approved suppliers to many major companies worldwide, in the following industries:
- Aero Engine Manufacture
- Power Generation - Steam and Nuclear
- Oil, Gas and Chemical Production

CROSS MANUFACTURING Co. (1938) LTD
SEAL DESIGN

SINGLE OUTFRINGER

SINGLE INSPRINGER

RING PACKS

3 OUTFRINGER & 2 INSPRingers
To seal on a bore

2 OUTFRINGER & 3 INSPRingers
To seal on a shaft

A PACK MADE UP OF PAIRS OF INSPRingers & OUTFRINGERs

COCKLE SPRINGS; used to hold the Sealing Ring against the sealing dia.

OUTFRINGER WITH COCKLE SPRING

INSPRINGER WITH COCKLE SPRING

TRIANGULAR SECTIONS; used in special applications

High Conductivity Copper

Stainless Steel PTFE

GASKET Cockle Spring Pushing Axially
BOOMERANG SECTIONS & CENTIPEDE SEALS

Cobalt Alloy
Boomerang Section

Nickel Alloy
Spring Legs

Boomerang Section Seal Ring is held against side of groove and sealing diameter by nickel alloy spring legs held in a carrier ring

GAP DESIGN

SIMPLE STRAIGHT CUT

STEP GAP

LATCH GAP

SIDE-STEP GAP
(Used in pairs)

SCARF CUT STEP GAP

SPECIAL GAPS FOR PARTICULAR APPLICATIONS
TYPICAL MATERIALS

COBALT ALLOYS
Haynes® 25, L.605, BS.HR.40, UNS.R.30605, XSH, KC.20WN, Stellite® 6B, Stellite® 31, X.40, Haynes 188

NICKEL ALLOYS
Nimonic® 75, 80A, 90, C.263. 901, Inco® 718, X-750, 625, 600, Waspaloy®

BRONZES
Phosphor Bronze PB.102, Aluminium Bronze CA.104

STAINLESS STEELS
Austenitic: 321, 316, S.521, DTD 734, Nitronic® 60
Martensitic: 420.S.45, DTD.326.A, S.80,

HIGH SPEED STEELS
M.2, 14% Tungsten H.S.S.

CARBON SPRING STEEL
S.203, AISI 1080

BALL RACE STEEL
535.A.99, AISI E.52100, S.135

The requirements for the material for the Seal Ring may be different from the requirements for its Spring. The choice of material is complex and we offer advice based on our own test results and experience of making rings in different alloys for use in a variety of conditions.

Free Consultancy Service
Large diameter metallic seals for use in hot and difficult environments pose many complex problems. We offer a complete package of design and manufacture including the detail design of customers grooves and housings. The experience we have gained over many years designing and making rings for a wide range of applications is available as a free consultancy service. Please contact Rodney Cross, who will be pleased to discuss with you your particular requirements.

Approvals Held
BS EN ISO 9002 : 1994. CERT. No. 924766
C.A.A. AI/3610/52 A8-2 & A8-5
We also hold approved supplier status to many companies.

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