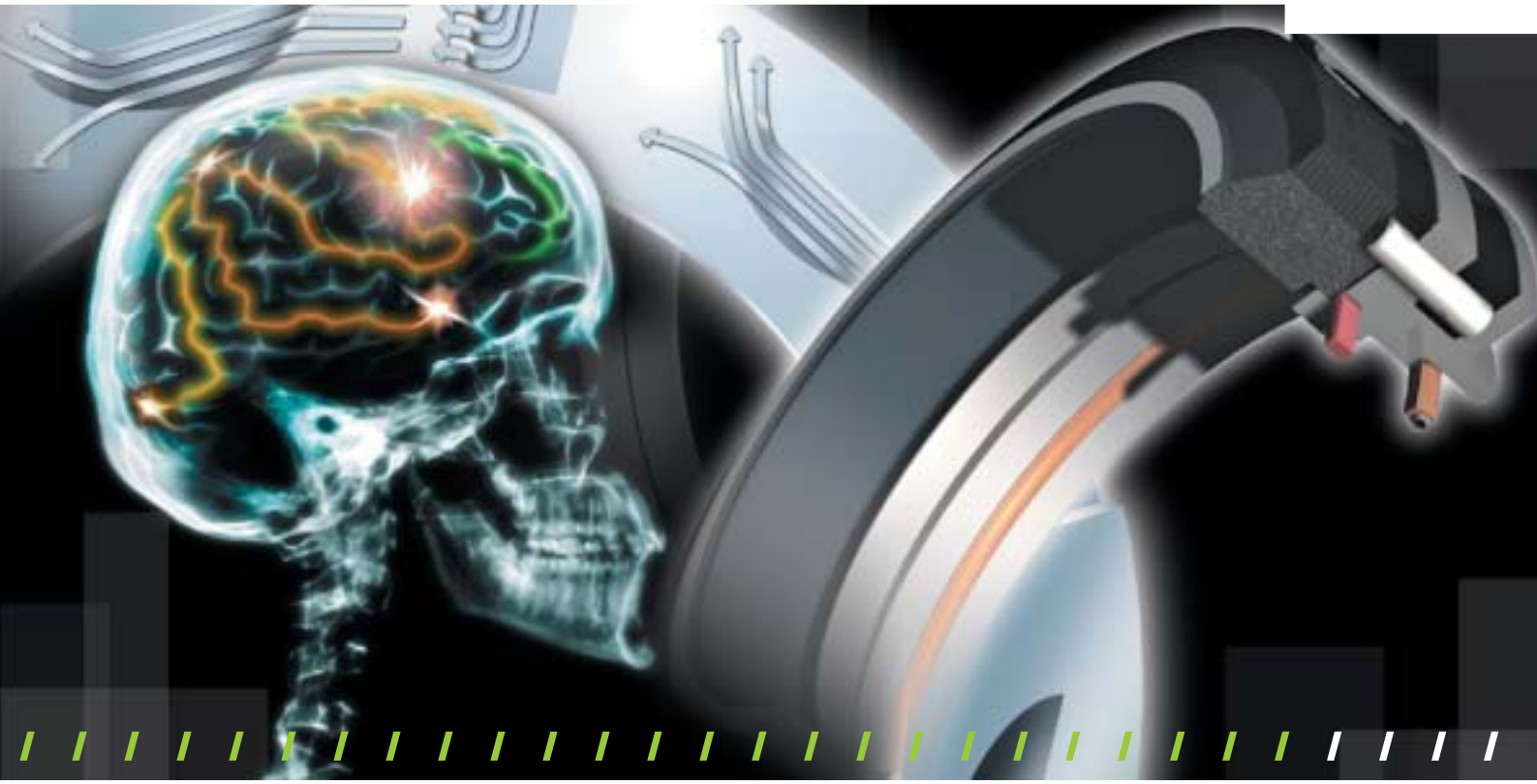
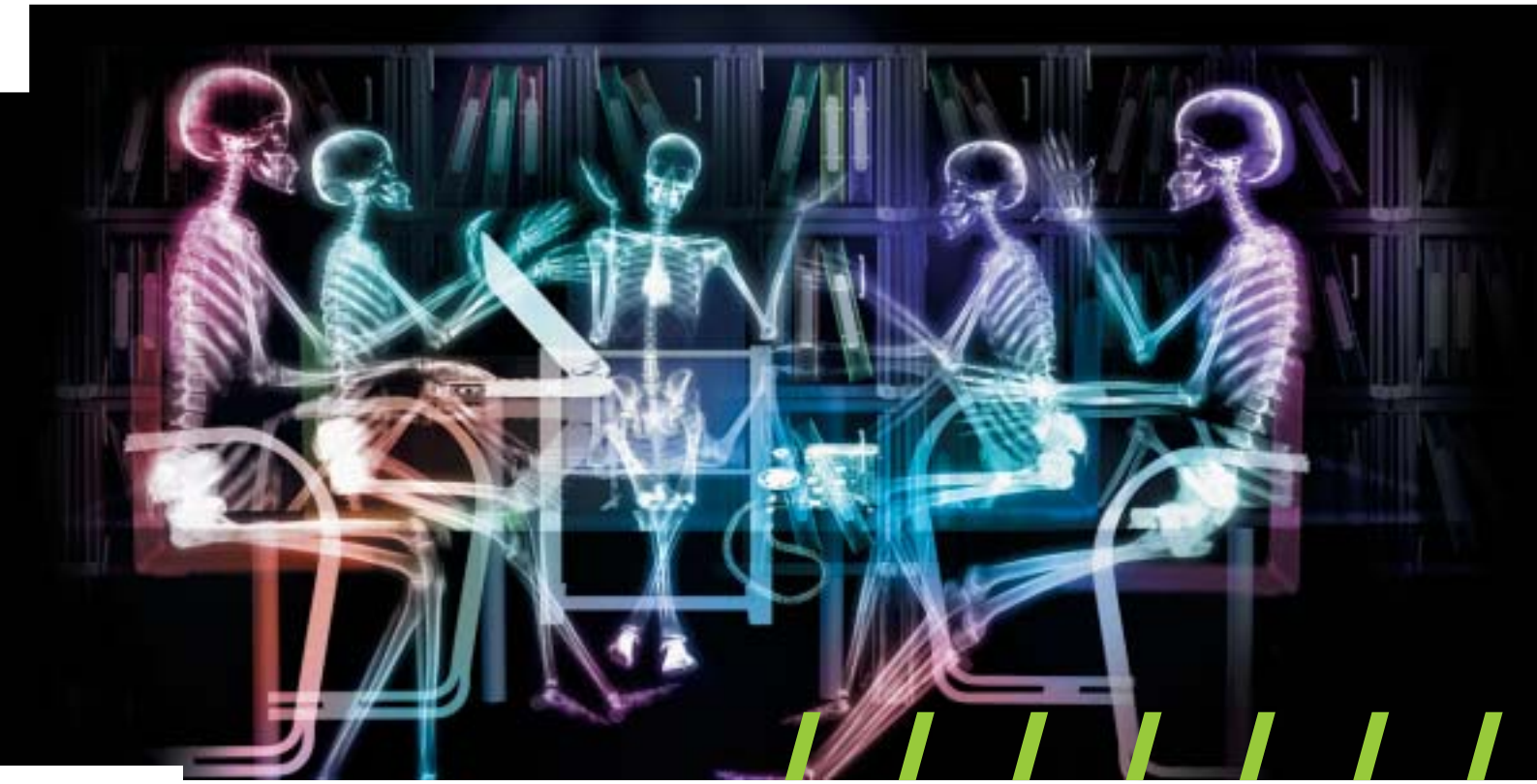


technology made clear

John Crane

technology made clear

Over the last two years, engineers at John Crane have analysed existing high duty mechanical seals to gain a clearer understanding of the technology required to significantly improve reliability and performance. As a result of this intensive research, new technological processes have been developed and applied. These new technologies deliver quantifiable improvements - reducing service interruptions and increasing profitability.



understanding the problem

The strategy for the research and development programme was based on a clear understanding of the problems faced by the Offshore Oil & Gas industry in new deep water developments and the demand for increased pipeline pressures.

Seal reliability on critical systems is directly related to the assets profit. The challenge was to deliver exceptional seal performance and reliability for operating duties in excess of 200 bar.

THE SOLUTION

A range of seals combining:-

- Advanced composite face materials
- Non contacting seal face technology
- Leading edge analytical tools
- Unique seal ring support technology

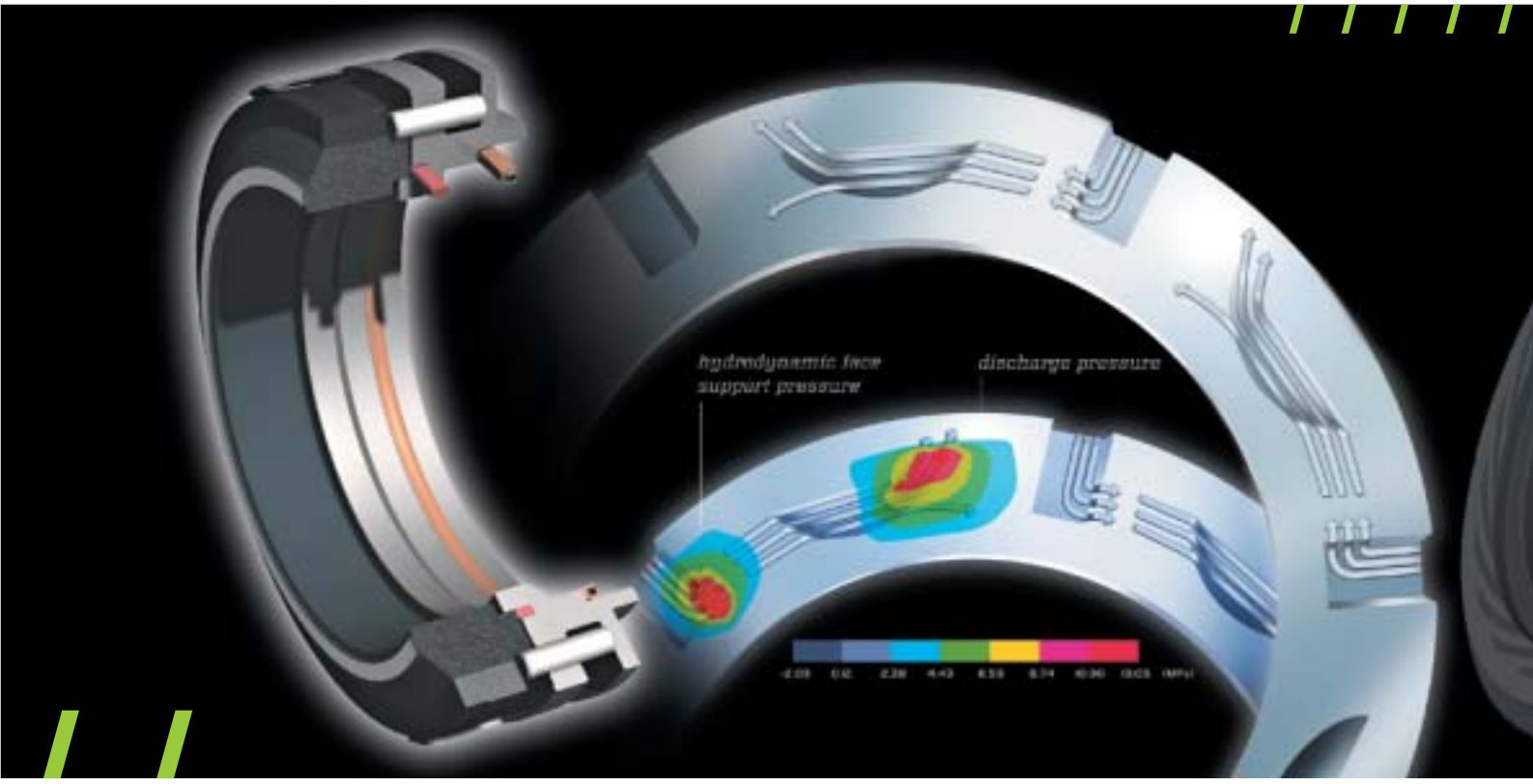
THE RESULT

High performance seal technology for the most demanding environments giving:-

- Exceptional reliability
- Ultra low hysteresis
- Maximum tolerance to process changes
- High tolerance to reverse pressure running
- High pressure dry running for remote locations

solutions

" By harnessing the benefits of aerospace materials, non contacting seal face technology and leading edge analytical tools, John Crane has driven seal technology to a higher level."



Total life cycle reliability

/// The use of specially developed polymer seals reduce the potential for seal hang up, a major contributor to plant down time.

/// Unique seal ring support technology ensures maximum tolerance to process changes.

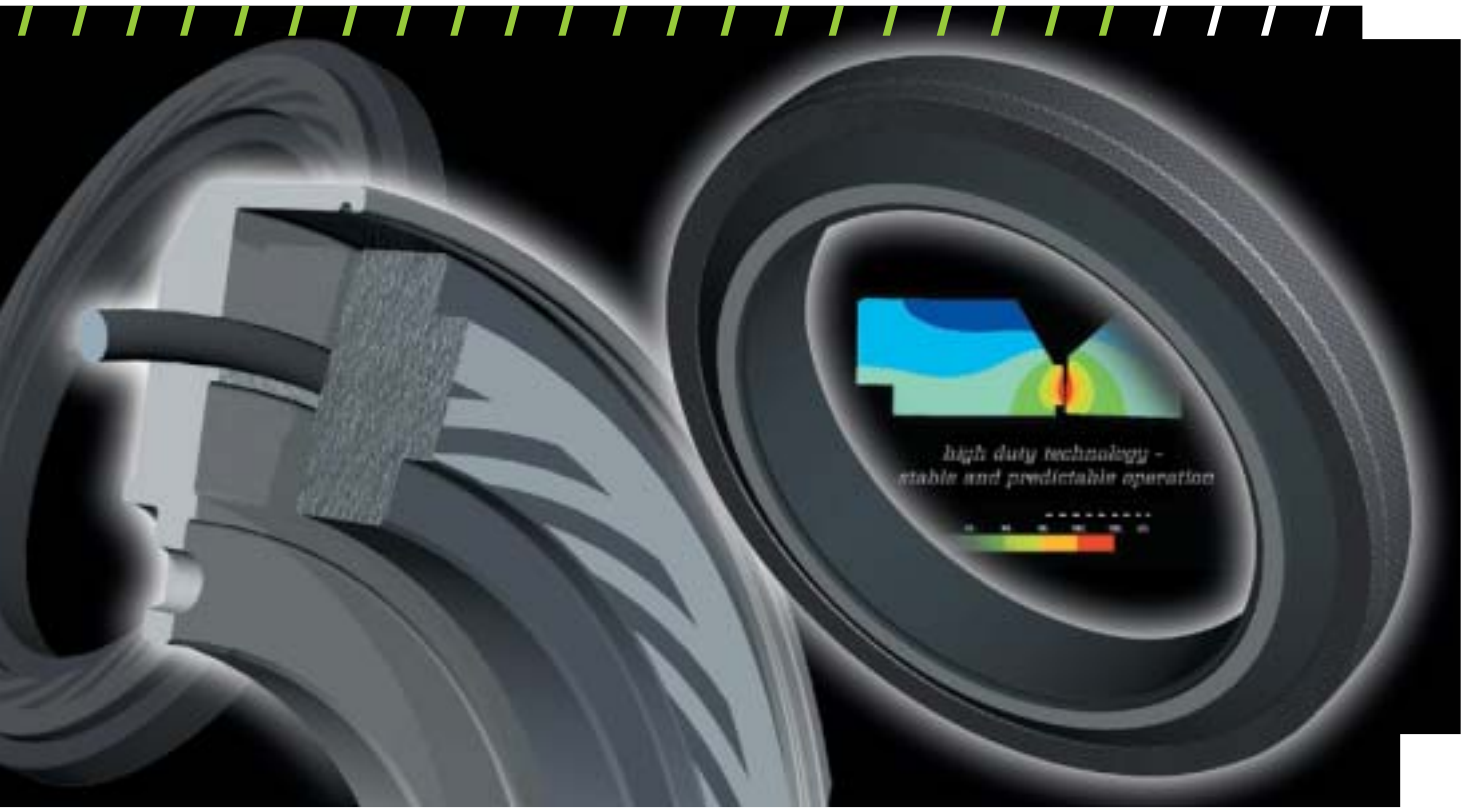
Sustained uptime

/// Using LaserFace, a unique patented John Crane technology, seal performance has been enhanced.

/// LaserFace provides a previously unobtainable tolerance to reverse pressure running, enabling seals to survive where others would fail.

/// Carbon fibre composite seal components eliminates reverse pressure failures caused by unstable process conditions.

technology



Meeting future needs

/// Ever increasing process demands require mechanical seals that meet both existing and future requirements.

/// High pressure dry running technology delivers a robust and cost effective solution to increasingly remote installations.

/// Upstream Pumping technology pioneered by John Crane provides a reliable solution in extreme and hostile environments.

Peace of mind

/// John Crane advanced seal technology uses the most advanced composite face materials to achieve the ultimate in seal performance.

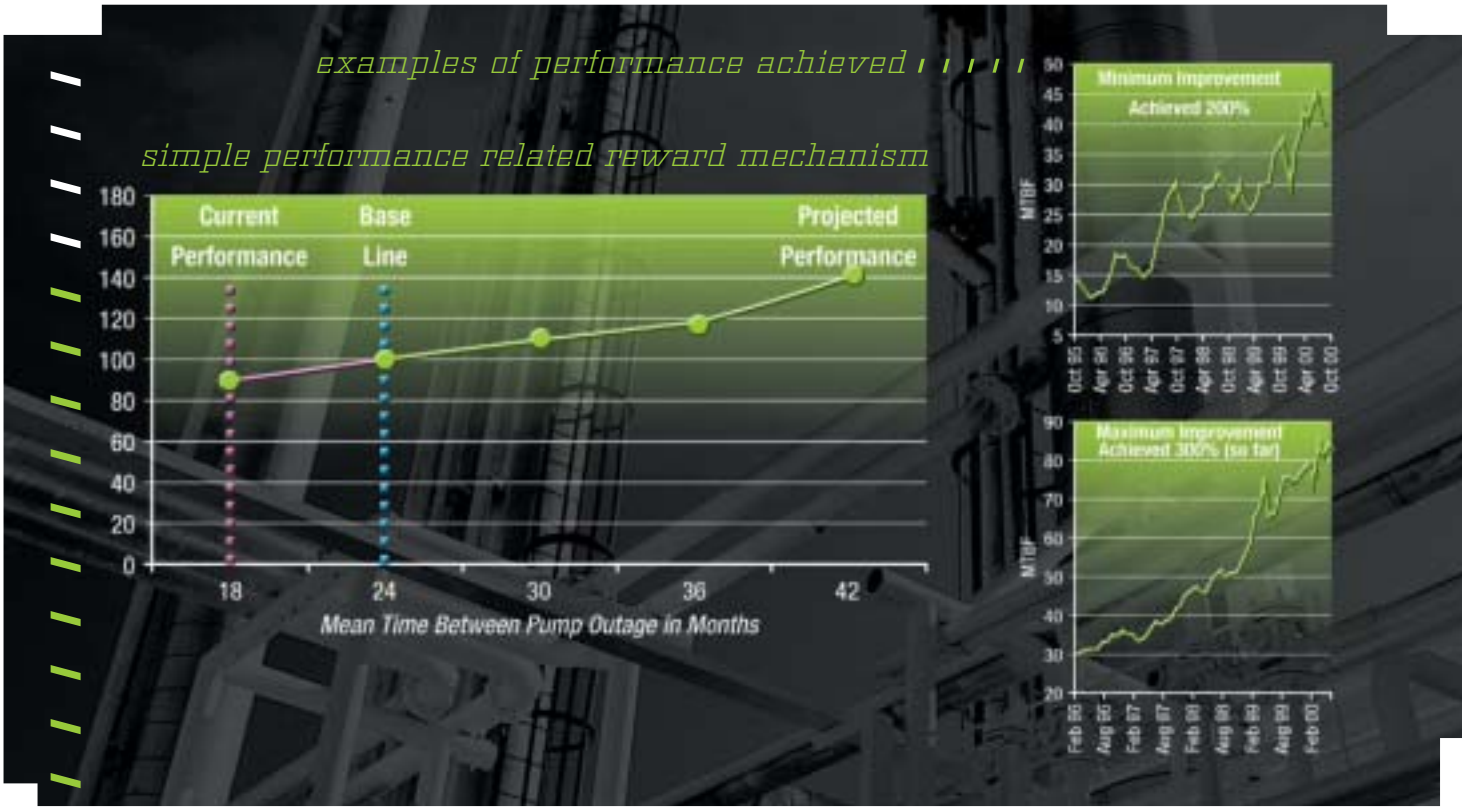
/// Seal performance is optimised with class leading analysis, design and development tools.

/// John Crane high technology seals are the cumulative result of 30 years experience in the global high performance pump environment.

made clear

customer financial benefits

Historically, upgrading to the latest technology was expensive and the traditional transactional purchase has not always guaranteed success.



John Crane's innovative "Integrated Solutions" approach, now introduced in many locations around the world, makes it possible to realise the benefits of advanced technology with the following results:

- No associated increase in operational expenditure
- No associated increase in capital expenditure
- Reward mechanism financed purely through exceptional performance
- Minimum 200% improvement in MTBF over life of the agreement
- 300% improvement in MTBF recorded in several locations
- Increased overall plant reliability
- Increased overall production forecasting
- Significantly improved Health & Safety standards

A 300% improvement has been achieved in several locations

the minimum improvement achieved has been at least 200%

Performance related payments are not requested until a 75% increase in reliability is achieved.

Europe
Slough, UK
Tel: 44-1753-224000
Fax: 44-1753-224224

Latin America
São Paulo, Brazil
Tel: 55-11-3371-2500
Fax: 55-11-3371-2599

Middle East, Africa, Asia
Dubai, United Arab Emirates
Tel: 971-4-3438940
Fax: 971-4-3438970

North America
Morton Grove, Illinois USA
1-800-SEALING
Tel: 1-847-967-2400
Fax: 1-847-967-3915

smiths
A part of Smiths Group plc

For your nearest John Crane facility, please contact one of the locations above.

If the products featured will be used in a potentially dangerous and/or hazardous process, your John Crane representative should be consulted prior to their selection and use.
In the interest of continuous development, John Crane Companies reserve the right to alter designs and specifications without prior notice. It is dangerous to smoke while handling products made from PTFE. Old and new PTFE products must not be incinerated.

©2002 John Crane Print 07/02 **www.johncrane.com** ISO9001, ISO14001, ISO/TS16949 Certified. Details available on request. B-**Hightechseals/Eng**