



FLUOROCARBON CASE STUDY



ROV - HIGH PRESSURE HYDRAULIC CYLINDER

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THE CHALLENGE

Each high pressure cylinder required 4 seals in the system. At full pressure of up to 6000psi the additional torque could cause the Ram to lock.

The original specification was an O ring energised PTFE double acting seal that worked by using the system pressure to further energise the "O" ring with the PTFE, onto the mating seal surface.

THE SOLUTION

As a retrofit seal, the existing housing details could not be changed, limiting the options for innovative solutions. Fluorocarbon provided a solution that pressure balanced the seal system.

By machining grooves around the circumference on each side of PTFE seal face and machining side notches into these grooves, this gave a path for the system pressure to flow into the circumference grooves to balance the system and also provide extra lubrication channels.

THE OUTCOME

This system provided a reduction in torque of 15% ensuring smooth and judder free operation of the ROV hydraulic arms.