



**Thompsons
Kelly & Lewis**

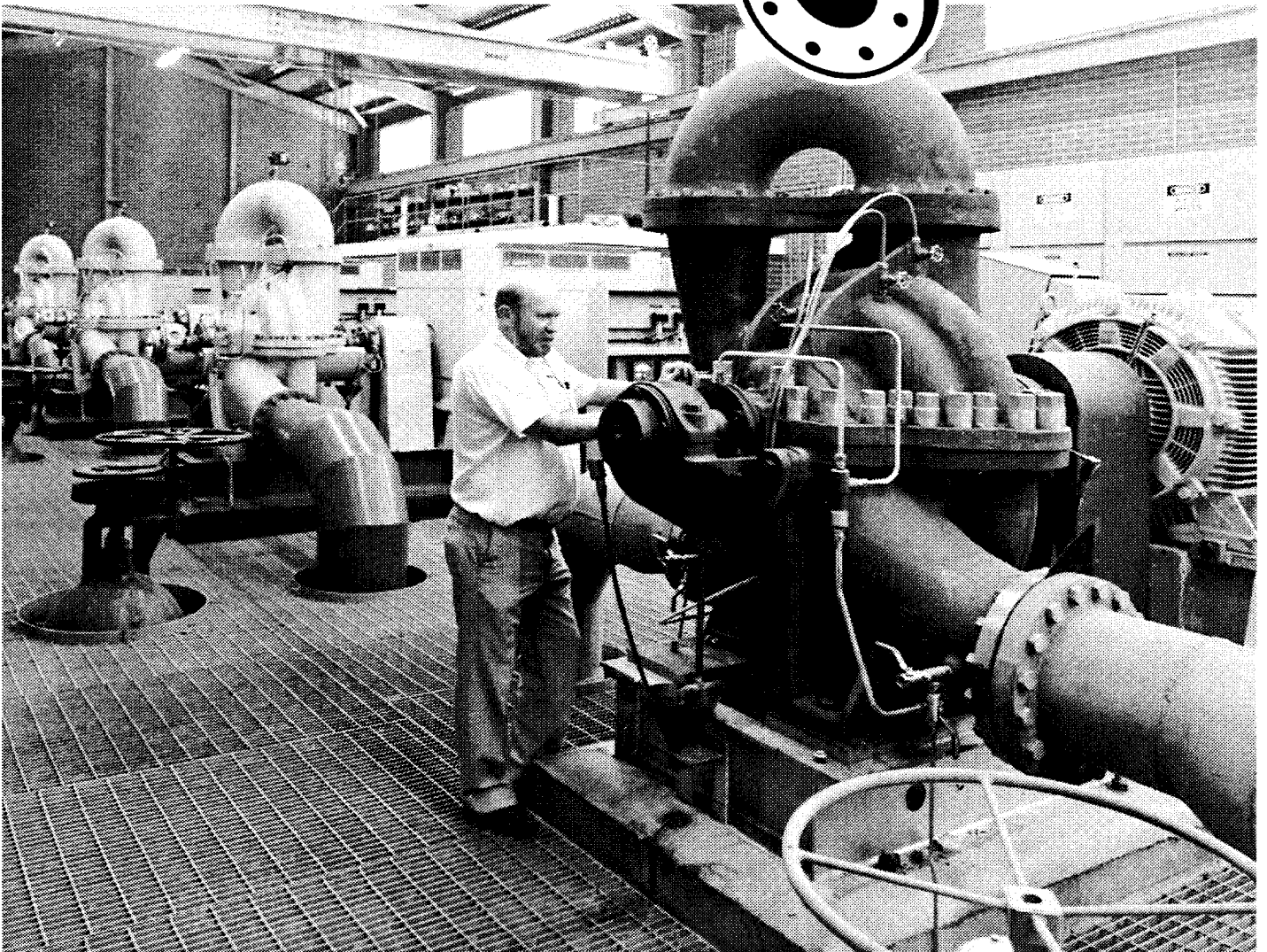
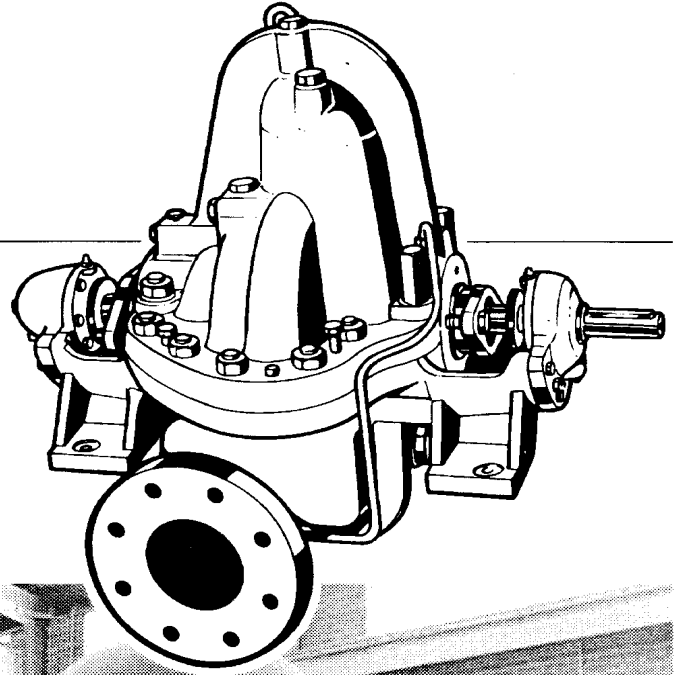
Quality

TYPE SCO

Opposed Impeller Split-Case Pumps

INTRODUCTION

These opposed impeller 2 or 4 stage split-case pumps, are suitable for high speed operation for efficiency and compactness as required for boiler feed, descaling sprays, water supply, pipeline use and other services. They are characterized by the high efficiency inherent in volute pumps.





OPERATING RANGE

Flow to 1300 L/s • Head to 300 m • Temperature ambient
Working Pressure to 3500 kPa • Power Range to 2500 kW
• Branch flange sizes 50 to 500 mm

CONSTRUCTION

GENERAL: TKL SCO centrifugal pumps are two-stage, horizontal, split-case units, with impellers arranged back to back. This opposed impeller design eliminates axial thrust. The cutwaters in the volute of each stage are diametrically opposite in order to minimise the radial reaction force on each impeller - this reduces shaft deflection and allows the pump to run at finer clearances and correspondingly increased efficiency.

CASING: The casing is split on the horizontal centre-line with the suction and delivery branches cast integral with the lower half casing. This allows the removal of the top half casing, thus enabling the internal passages and rotating element to be inspected or the element removed without disturbing the pipe joints or moving the motor. Renewable wearing parts protect the pump casing at points where wear may occur.

IMPELLER: The impellers are of the shrouded single entry type, external surfaces are machined to a smooth finish and waterways are surfaced to reduce skin friction to a minimum, individual impellers and rotating element being carefully balanced to eliminate vibration. Impellers are driven by an accurately fitted key and are located by sleeves and secured by locknuts screwed with right and left hand threads.

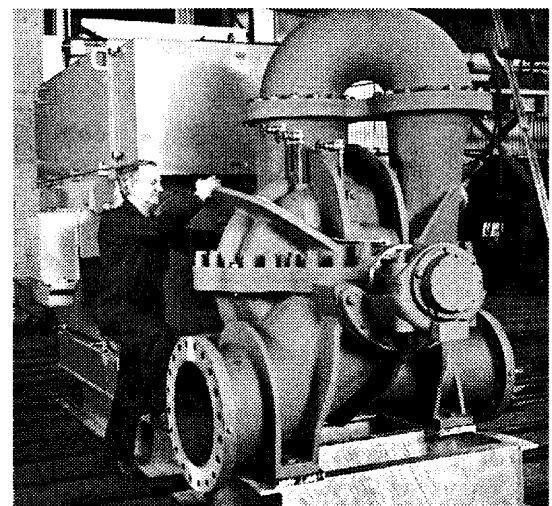
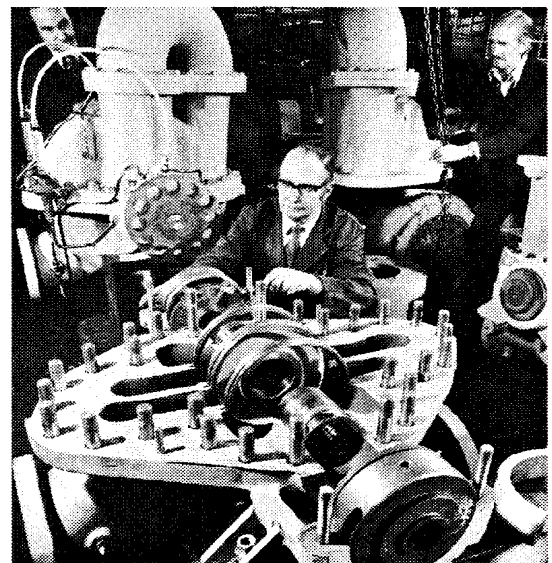
BEARINGS: Bearings are of the ball or roller type, having a high life factor under all conditions of service. The bearing at the driving end is a self-aligning radial bearing free to slide in the housing, while at the other end there is a double row angular contact bearing, so arranged to carry a residual thrust load in addition to its share of the radial load. Both bearings are grease lubricated and enclosed in dust and moisture proof cartridges, supports for which are cast integral with the lower half casing and split on the centre-line to allow withdrawal of the bearings and cartridges with the rotating element.

SHAFT: The shaft is of high tensile steel. The diameter is increased at the centre to receive the impellers, thereby giving maximum rigidity between the bearings.

STUFFING BOXES: The stuffing boxes are of ample depth and are provided with split glands and high quality packing. Although the high pressure stuffing box is subject only to first stage pressure, it is fitted with a labyrinth-type combined neck and lantern bush and water leaking past the bush is bled back to the pump suction.

Thus the outermost rings of packing are subjected to little more than suction pressure. The stuffing box on the suction side of the pump is fitted with a conventional neck and lantern bush-type water seal. Shaft sleeves are fitted for protection of the shaft and driven by the impeller key and secured by separate locknuts.

VARIATIONS IN CONSTRUCTION & MATERIALS: As the pumps are supplied strictly in accordance with the requirements of the customer as regards construction and materials, it may, in some cases, be necessary to depart from the "Standard" construction as specified. The most common variations are: Mechanical Seals, Impeller Wear Rings, Water-cooled Bearings, Oil-lubricated Bearing, and Vertical Mounting.



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