CASE STUDY
INDUSTRY: **REFINERIES**

Armstrong®

bp

CUSTOMER: BP - Marine Lubricants Plant

LOCATION: Pangbourne, United Kingdom

BACKGROUND: Extensive and continuous testing of automotive lubricants is a vital part of on-going research at the BP plant at Pangbourne. To achieve this, BP devised a number of test rigs where coolant, usually a water/anti-freeze mixture, is fed to a test engine to maintain the lubricant at a controlled temperature.
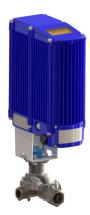
BP required temperatures to be maintained at a constant, low variation level; however BP wanted flexibility to alter the temperature quickly. BP's existing system used pneumatically activated valves, control valves, and temperature sensors which proved to be too inadequate and unstable. The existing system could only maintain temperatures within ±4°F (±3°C) plus temperature changes were too slow and not as sensitive as BP required. BP planned to redesign the entire rig and decided to improve their temperature control operation at the same time.

SCOPE OF WORK: The Emech™ Digital Control Valve, which is a complete stand alone digital control system, was integrated into BP's new test rig redesign. Essentially it integrates the control of liquid into one easy to install package. The advanced actuator, software, sensor and mixing design means that output temperatures can be controlled to ±1°F (±0.5°C) and response to the required changes in temperature is instantaneous.

BENEFITS: The Emech™ system allows BP to friction test lubricants at constant accurate and precise temperatures between 68°F - 176°F (20° - 80°C), which strengthens its ISO 17025 credentials. Additionally, because of the tightly controlled testing, BP can claim superior procedures in comparison to its competitors – an important commercial advantage.

Overall, the Emech™ Digital Control Valve system allows BP to operate within very tight constraints to deliver testing accuracy. Armstrong's Emech™ solution has increased the accuracy, flexibility and speed of BP's testing. Since the initial installation, BP has ordered another Emech™ package for its second test rig with the intention to fit them into all test rigs as budgets allow.