

A large offshore oil and gas platform is shown at sunset. The platform is illuminated with warm lights, and the sky is a mix of blue and orange. The platform has multiple levels with complex piping and structures. A crane is visible on the right side. The platform is supported by several legs in the water. The text "WG-DUQ" is visible on the left side of the platform.

ULTIMATE PERFORMANCE PUMP SOLUTIONS IN THE OIL & GAS INDUSTRY

FOR WHERE IT REALLY MATTERS

spp
PUMPS



TRUSTED, MISSION-CRITICAL PERFORMANCE. ON AND OFFSHORE.

SPP Pumps Ltd brought the UK's first ever North Sea Oil from the Argyll platform to our shores in the 1970's. Today, SPP Pumps' specialist design and engineering provides maximum uptime and performance across the world.

With over 850 SPP Pump systems operating in more than 140 fields and 700 installations onshore, SPP Pumps expertise always delivers more...



EXCEPTIONAL VALUE: CUSTOM DESIGNED AND PROJECT MANAGED

From the initial client criteria through CAD drawing to final product installation, the SPP Pumps team works tirelessly to design and deliver integrated projects. Customised in-house design quickly solves customer application challenges, whilst experienced project management offers unparalleled added value.

EXCEPTIONAL PERFORMANCE: THE OPTIMUM PACKAGE FOR ANY APPLICATION

SPP Pumps' capability extends far beyond the design and manufacture of best-in-class pumps. The company packages pump units into complete solutions. The result is finely tuned, bespoke-engineered units that precisely meet the performance specification each application requires.

EXCEPTIONAL RELIABILITY: PROVEN AND TESTING INTEGRITY - QUALITY ASSURED

Lives, property and livelihoods depend on a pump's performance. In Oil and Gas applications, premature failure is simply not an option. Backed by one of the most extensive specialist testing facilities in the UK, every SPP Pumps manufacturing site is ISO 9001:2001 approved, with PD ISO/TS 29001:2007 approval for the Oil & Gas sector, ISO14001 (environmental), ISO 18001 (H&S), Achilles and First Point Assessment verified. All pump packages, including fire pumps, comply with the latest industry regulations.

ABOUT SPP PUMPS

SPP Pumps has been a leading manufacturer of centrifugal pumps for over 130 years. With a global reputation for satisfying arduous on and offshore pumping applications such as seawater lift, intake, cooling water, ballast water and fire water systems, SPP Pumps also offers an API 610 range for hydrocarbon applications.

A global company, SPP Pumps operates R&D, manufacturing, test facilities and service sites in the UK, USA, India, France, South Africa, UAE and Egypt, and local sales offices in Singapore, Italy, Poland, Holland and The Czech Republic.

Over 500 staff, including 50 specialist engineers, provide round-the-clock advice and support for critical pumping operations, for some of the world's largest organisations.

OIL AND GAS SECTOR APPLICATIONS

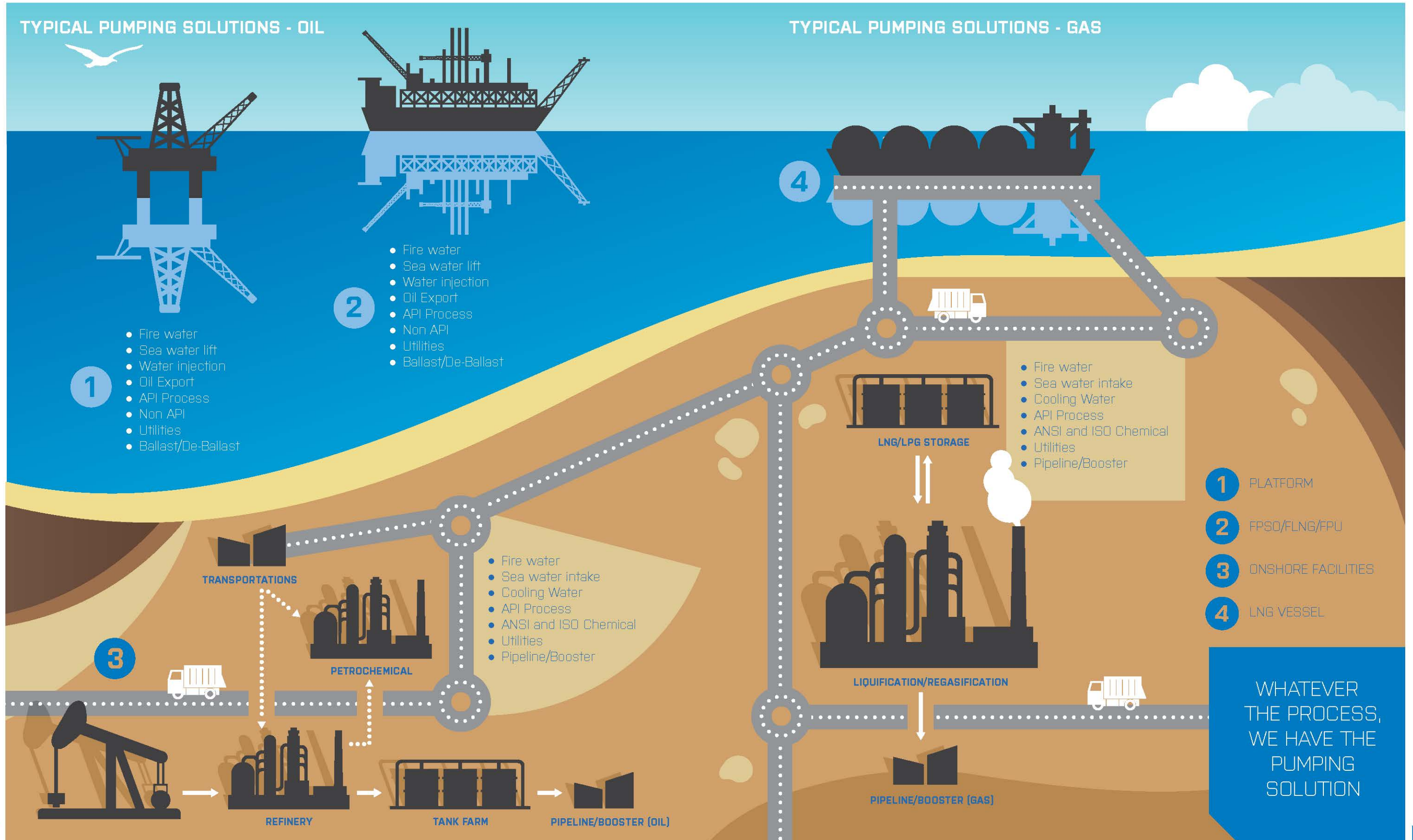
- Main fire pump
- Firewater jockey pump
- Booster pumps
- Seawater intake
- Seawater lift
- Ballast/De-Ballast
- Cooling water
- Hydrocarbon and process pumps
- Utilities

SPP PUMPS PRODUCTS AND SOLUTIONS

- Multistage pumps
- Between bearing pumps
- Overhung pumps
- Generator sets
- Direct and indirect drive
- Bespoke package solutions
- Engineering services



WHERE CAN SPP PUMPS' PROVEN TECHNOLOGIES SUPPORT YOUR OPERATIONS?



DEDICATED SECTOR EXPERTISE.



With a dedicated Oil & Gas division, SPP Pumps' specialist flexible engineering team draws on over a century of experience solving demanding fluid handling challenges for diverse applications the world over.

STREAMLINED PROJECT MANAGEMENT.

Lost Oil or Gas production, even in a small facility, can cost an operation millions of pounds per day. Rigorous project management – and in particular close collaboration and communication with customers – ensures SPP Pumps' solutions are optimally matched to the performance needs.

The Oil & Gas Project Managers, all qualified PRINCE2 Practitioners, ensure a robust, consistent methodology across every project.

CUSTOM-ENGINEERED SYSTEMS - PRE-ENGINEERED COMPONENTS.

Every SPP Pumps system is individually tailored to a unique customer application and operating environment. Through close consultation, complex client needs are scoped accurately, whilst custom design solutions ensure every sub-assembly can be configured and integrated precisely – maximising efficiency, reliability and performance of the full system over its lifecycle.

Combining state-of-the-art analysis and modeling with in-house prototyping and manufacture, SPP Pumps is unique in its ability to design and deliver bespoke, fully integrated packaged pump solutions, utilising latest material technology including composit materials and manufacturing techniques, such as 3D printing of pump moulds.

SPP PUMPS:

A GLOBAL PUMP SUPPLIER



PROJECT SNAPSHOT

- 1 SHAH DENIZ 2, AZERBAIJAN
- 2 ZUBAIR OIL FIELD DEVELOPMENT, IRAQ
- 3 FLNG, OFFSHORE MALAYSIA
- 4 KHARYAGA PHASE 3, RUSSIA (MURMANSK)
- 5 BARZAN ONSHORE PROJECT, QATAR
- 6 JASMINE, SOUTHERN NORTH SEA
- 7 PY34-1/35-2/35-1, OFFSHORE CHINA
- 8 CYGNUS, SOUTHERN NORTH SEA
- 9 GUMUSUT, MALAYSIA
- 10 WESTERN ISLES DEVELOPMENT PROJECT, WEST OF SHETLAND
- 11 QUAD 204, NORTHERN NORTH SEA
- 12 PEARL LNG, AUSTRALIA
- 13 BIO-FUEL, SINGAPORE
- 14 OFON II, NIGERIA
- 15 CHILEAN LNG, CHILE

ENGINEERING FOR THE HARSHEST ENVIRONMENTS.

Experts estimate 1.4 trillion barrels of Oil equivalent lie in undeveloped Oil and Gas fields around the world*. Let SPP Pumps support your operations in environmentally extreme and increasingly regulated environments.

LIMITING NOISE PUMP ENCLOSURES.

Depending on location, ambient pump noise levels may be a concern. Using advanced insulating materials, SPP Pumps' special acoustic enclosures and modules reduce operating noise to acceptable levels.

Enclosures can be designed to cover all or part of a pump package to suit the specific requirements of the installation/site.

Where there is a risk of combustion, A0 or A60 fire rated and H60 or H120 hydrocarbon fire rated enclosures and complete modules are also available.

REDUCING RISK IN HAZARDOUS AREAS.

Sometimes pump packages may need to operate in an environment where hazardous gases may be present. SPP Pumps supplies equipment to meet the designated area classification (ATEX, NEC 500/505, IEC/CENELEC).

EASING INSTALLATION THROUGH PACKAGED SKIDS.

Where environmental conditions or location dictate that on-site installation works are minimal, SPP Pumps offers fully packaged skids or pump houses incorporating multiple pump sets.

**Source: "One trillion barrels – the global potential of undeveloped discoveries", Wood Mackenzie, 12 September 2013*

"29% OF OIL AND GAS OPERATORS POLLED BY DNV GL PLAN TO ENTER CHALLENGING AND POTENTIALLY HOSTILE NEW ENVIRONMENTS TO EXTRACT RESOURCES IN 2014."*





PROVEN RELIABILITY UNDER PRESSURE.

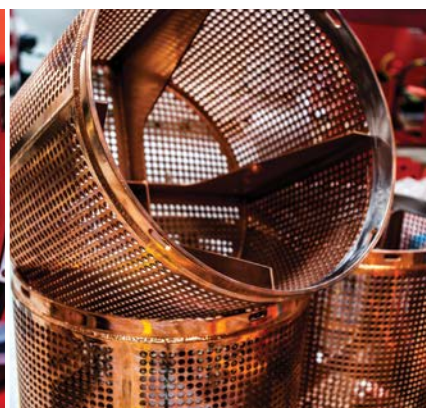
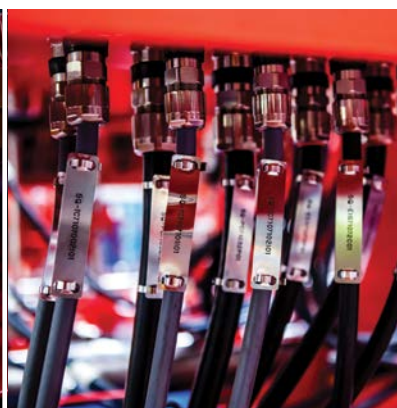
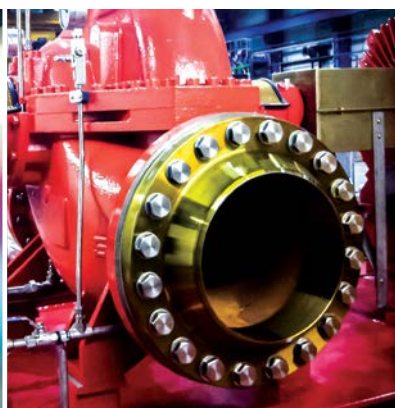
Receiving pump system orders for business-critical applications every month, organisations around the world trust SPP Pumps' design and manufacturing capabilities.

INNOVATIVE DESIGN AND MANUFACTURING CAPABILITY.

Using the most advanced computer testing in the world, SPP Pumps designs, simulates, evaluates, refines and manufactures all products and packaged systems.

The UK facility in Coleford has attained the highest industry standards for quality and reliability. More than 50 engineers are engaged in application engineering and R&D departments across major industry sectors, providing capabilities spanning all aspects of pump design, hydraulics, rotating machinery, electrical systems and package design. Advanced CAD and engineering software means pump products can be quickly adapted or, alternatively, completely re-imagined for a bespoke application.

'Lean Manufacturing' supports continuous improvement and a 'right first time' philosophy. CNC systems in the machine shop are linked to a DNC system, allowing programming to be carried out on the machine or offline.



PROVEN INTEGRITY THROUGH RIGOROUS TESTING.

Testing of all pumps takes place in SPP Pumps' own extensive test facility.

Rigorous fast-run duty tests, also witnessed by customers and contractors, typically extend to nine hours.

Boasting a 1.2 million litre well six metres deep, engineers can test pressures up to 50 bar; flows up to 2000 l/s; and at 50Hz powers up to 800kW at 415V and 2MW at 11kv, 10kv, 6.6kv, 5kv, 3.3kv - with generators available for even higher powers or voltages.



A LIFETIME OF SUPPORT AFTER INSTALLATION.

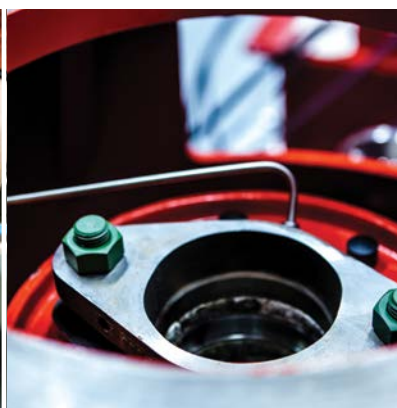
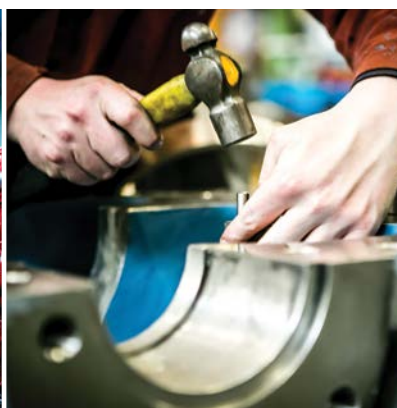
SPP Pumps' Field Service Engineers travel more than 600,000 miles each year providing global product support: rapid response for emergency repairs, planned contractual maintenance and product training. With extensive experience working on both land and offshore Oil & Gas installations, engineers are fully versed in all current Health & Safety requirements.

Throughout the equipment's lifetime, SPP Pumps supplies spare parts to OEM specification. When two platforms in the North Sea had ceased production, at a loss of £1.5 million per day, due to catastrophic failure of the caissons housing the fire pumps and damage to the pumps themselves, they turned to SPP Pumps expertise to resolve the emergency situation.

In just 10 weeks the team of highly skilled SPP Pumps engineers provided new pump and column assemblies to reinstall fire cover and get production restarted on the platforms. A project of this scale would normally take around 26 weeks to turn around, but the dedication of the team to resolve the issue as swiftly as possible saved the company millions of pounds in lost revenue.

"62% OF RESPONDENTS SURVEYED BY DNV GL SAY THEY FACE GROWING PRESSURE TO EXTEND THE LIFE OF EXISTING ASSETS AND INCREASE THE RETURN ON THESE INVESTMENTS"*

**Source DNV GL: Challenging Climates: The outlook for the Oil and Gas industry in 2014*



SPLIT CASE PUMPS

Specifically engineered for the oil, gas and process industries, these robust products offer proven long term reliability, especially in arduous operational and environmental conditions.

- Low NPSH* capability, high efficiency
- Balanced axial loads – maximum bearing life
- Removable top casing for easy maintenance
- Lowest life cycle cost through industry leading efficiency and rugged mechanical design

OPTIONS AND DESIGN CONFIGURATIONS

- Various construction materials to meet project requirements
- Custom engineering options

- Horizontal, vertical, direct coupled or vertical open shaft configuration
- Hydraulic drive
- Clockwise or counter clockwise rotation
- European or US flange drillings

APPLICATIONS

- Main fire pump
- Firewater jockey pump
- Booster pump
- Seawater intake
- Seawater lift
- Cooling water
- Hydrocarbon and process pumps
- Utilities

* Net Positive Suction Head



VERTICAL LINESHAFT PUMPS

Custom engineered single or multi-stage vertical turbines. Driven by surface mounted electric or diesel drivers, they can be supplied up to 100 metres in overall length.

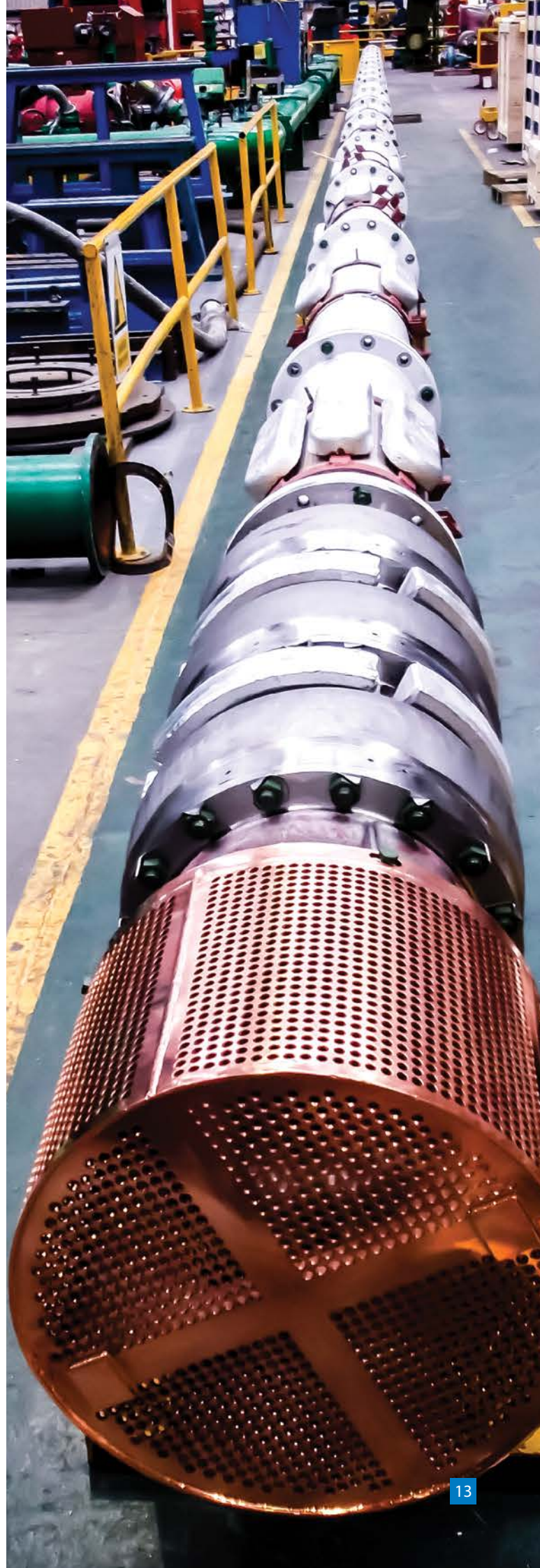
- Exceptional range of choice
- Ideal for fresh water or sea water for cooling purposes, fire protection duties, general water supply, washdown or drill water
- Handling crude oil or controlling spillages

OPTIONS AND DESIGN CONFIGURATIONS

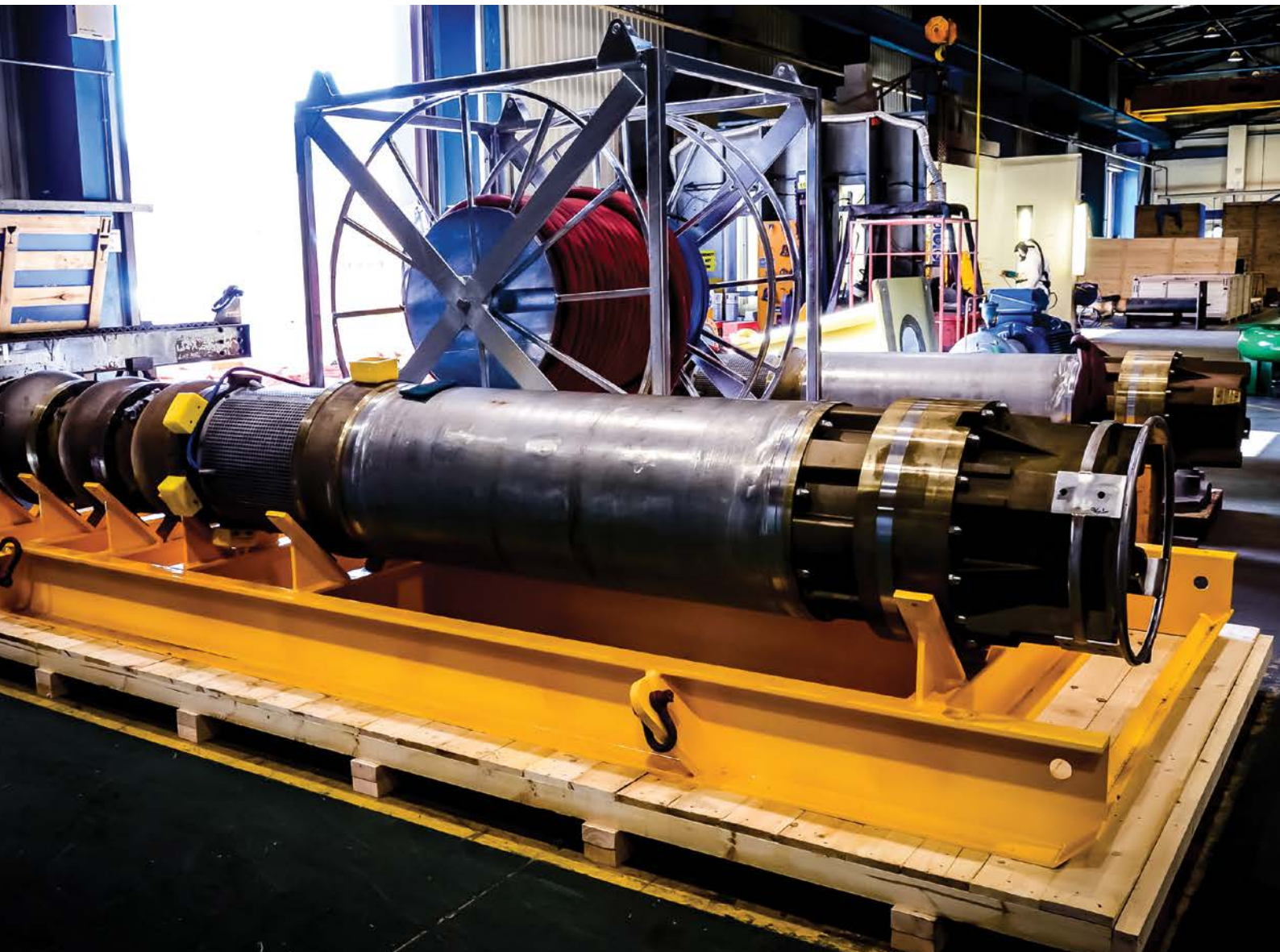
- Flexible/stiff shaft
- Tilting pad or anti friction driver/gearbox mounted thrust bearings
- Special suction impellers
- Cast or fabricated column pipes
- API 610 construction
- Marine anti fouling systems
- Below deck discharge (for platform or jetty)
- Sacrificial anodes
- Hydraulic drive

APPLICATIONS

- Main fire pump
- Firewater jockey pump
- Cargo handling
- Seawater intake
- Seawater lift
- Cooling water
- Hydrocarbon and process pumps
- Utilities



VERTICAL ELECTRO SUBMERSIBLE PUMPS



Vertical turbine design with either single or multi-stage configuration. Driven by submersible (IP68) motors as an alternative to deck mounted drive units. Ideal for offshore installation where space precludes conventional platform mounted lineshaft pumps.

- Up to 100 meters in overall length
- Pump and motor are located below sea level in a caisson
- Diesel generator is placed on the platform

OPTIONS AND DESIGN CONFIGURATIONS

- Driven by existing platform supplies or dedicated diesel generator drives

- Motor mounting above or below pump hydraulic
- Fully packaged generator sets also available
- Cast or fabricated column pipes
- API 610 construction
- Marine anti-fouling systems
- Sacrificial anodes

APPLICATIONS

- Main fire pump
- Firewater jockey pump
- Booster pump
- Seawater intake
- Seawater lift
- Cooling water
- Hydrocarbon and process pumps
- Utilities

HYDROCARBON AND PROCESS PUMPS

To complement our core range of horizontal and vertical pumps, SPP Pumps is also able to offer an extensive range of API 610 pumps.

TYPICAL APPLICATIONS

- On and offshore
- Refinery & Petrochemical
- Gas / LNG / LPG
- Tank Farm & Pipeline
- Utilities

API 610 & ISO 13709 RANGES

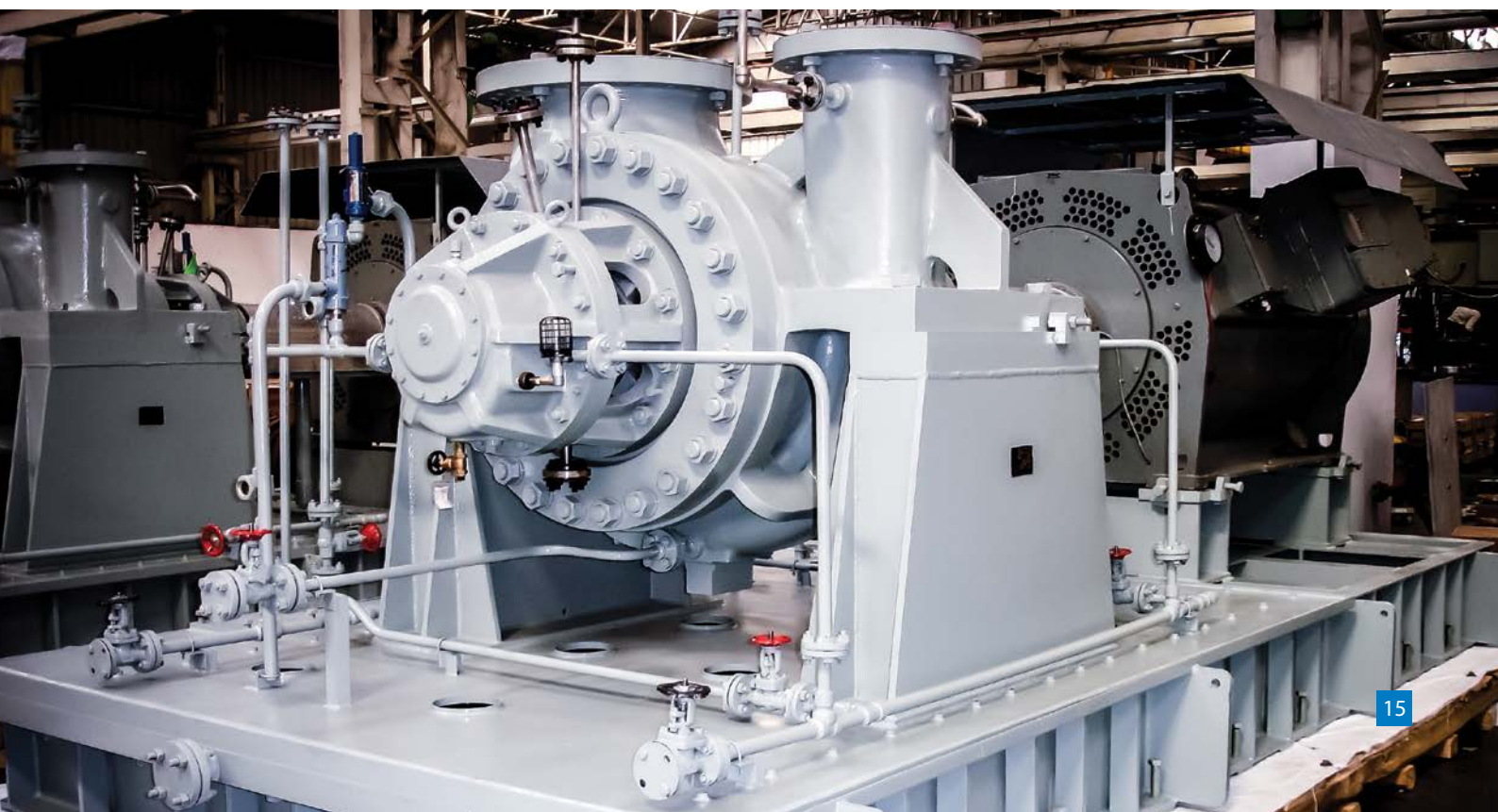
- OH2, Horizontal, single stage, overhung
- OH 3 / 4 / 5, vertical In-Line, single stage, overhung
- BB1, horizontal or vertical axially split, single & two stage, between bearing
- BB2, horizontal, radially split, single & two Stage between bearing
- BB3, horizontal, axially split multistage between bearing
- BB4, horizontal, multi stage, ring section, between bearing

- BB5, horizontal, multi stage, radially split, between bearing, barrel
- VS1, vertical suspended, lineshaft or submersible motor
- VS4 / 5, vertically suspended sump
- VS6, vertical suspended, canister
- Speciality Pumps

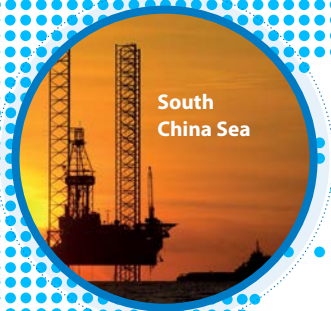
DESIGN FEATURES

- Pump design life exceeds API requirements
- Casing thickness can be designed to exceed API by an additional 25%.
- Bearing design life greatly exceeds API standards.
- Shaft Deflection criteria met at worst case operating conditions to ensure maximum seal life.
- Bearing housings equipped with high quality bearing isolators to prevent contamination.
- Condition Monitoring options available.
- Flexible Engineering team to accommodate client specific design requirements

FOR MORE INFORMATION ON SPP PUMPS' API RANGE, PLEASE REQUEST SPP PUMPS' DEDICATED API BROCHURE.



DELIVERING PERFORMANCE ACROSS THE WORLD



FOR HELP WITH YOUR
NEXT OIL & GAS PUMP
APPLICATION, TALK TO
THE EXPERTS.

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* Applies to: Coleford Manufacturing Site, Northern Service Centre and Wales & West Service Centre.
SPP Pumps are proud to be working towards achieving this accreditation at all sites.