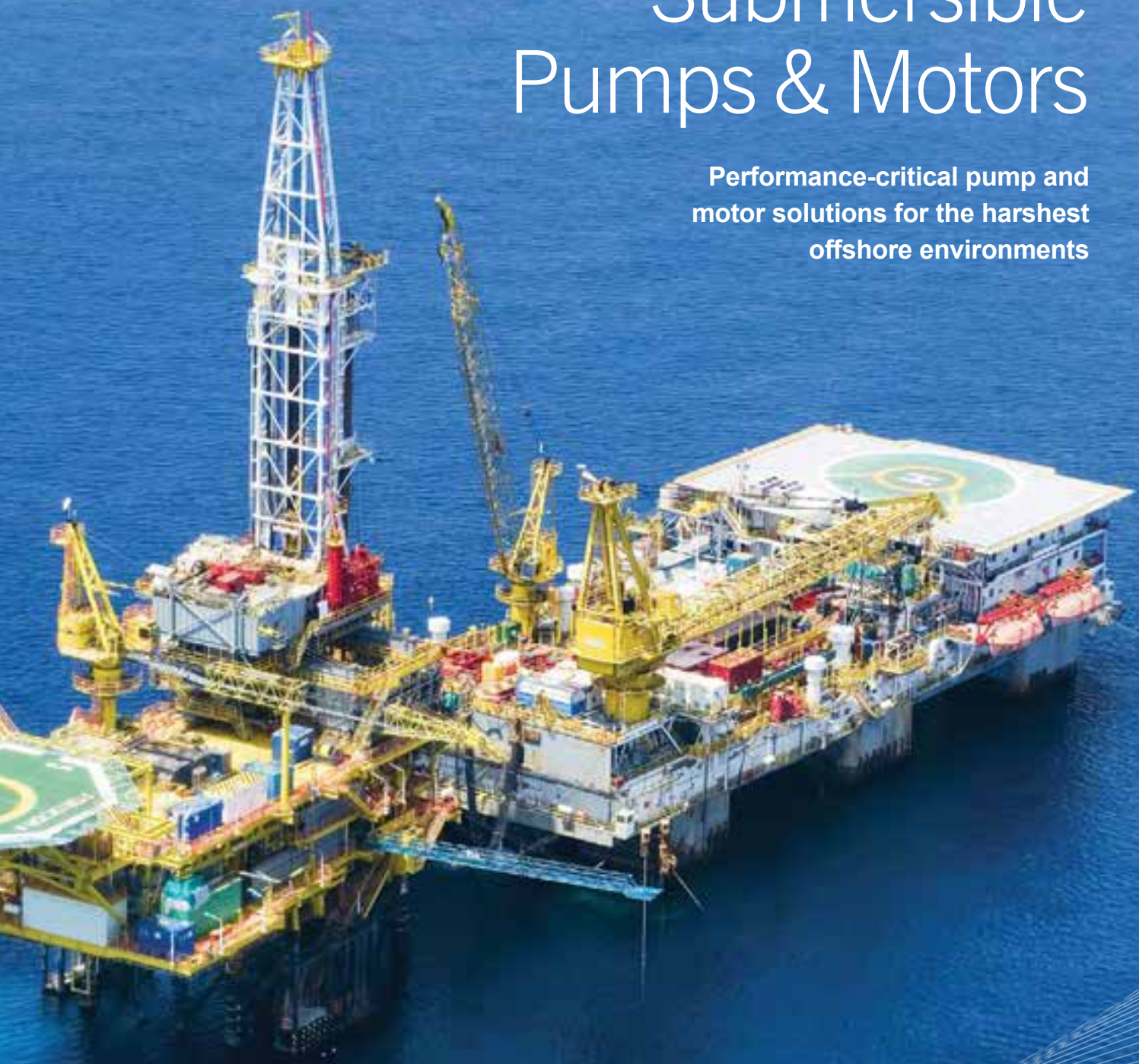
HAYWARD TYLER

Submersible Pumps & Motors

Performance-critical pump and motor solutions for the harshest offshore environments



ENGINEERING EXCELLENCE
SINCE 1815
200 YEARS

HAYWARD TYLER

We design, manufacture and service submersible pumps and motors for performance-critical applications across the globe.

50 years
offshore experience
250 units installed worldwide

3,000 kW
submerged motor qualification
6 MW design capability

13.8 kV
high voltage design

40,000 hrs
between maintenance

25 years
design lifetime

24 / 7 / 365
customer service

Save Critical Topside Footprint with a Submersible Pump and Motor

Hayward Tyler's electrical submersible pumps and motors are installed inside the caisson to minimize the topside footprint. Our pumps and motors are used in the most demanding offshore applications, offering high reliability while saving both critical space and money.

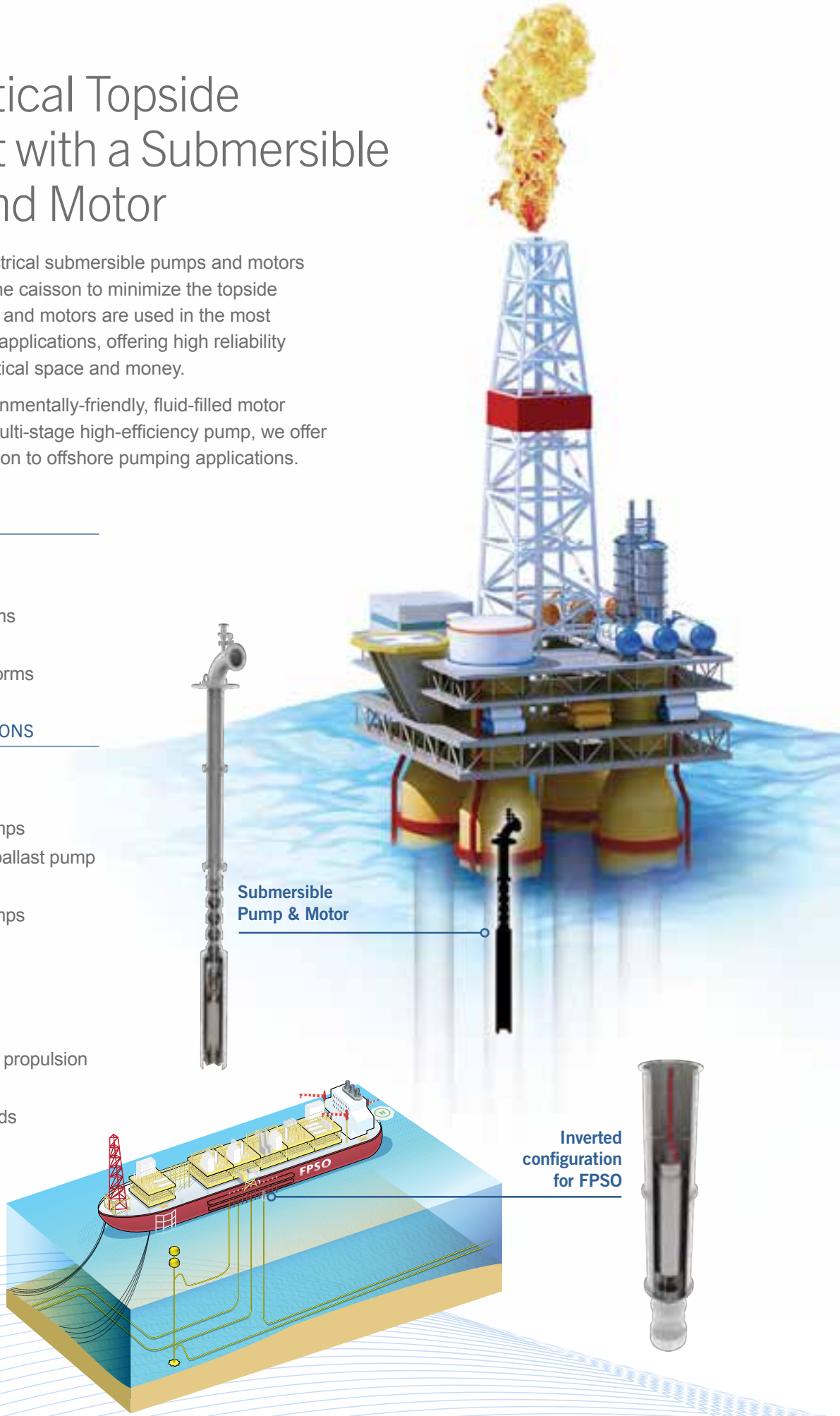
By utilizing an environmentally-friendly, fluid-filled motor close coupled to a multi-stage high-efficiency pump, we offer a more reliable solution to offshore pumping applications.

TYPICALLY USED ON

- → FPSO
- → FLNG
- → Offshore Windfarms
- → Fixed Platforms
- → Tension Leg Platforms

COMMON APPLICATIONS

- → Seawater lift
- → Firewater lift
- → Caisson drain pumps
- → Hull-ballast & de-ballast pump
- → Water injection
- → Cooling water pumps
- → Booster pumps
- → Jockey pumps
- → Process pumps
- → Marine thrusters
- → Marine secondary propulsion
- → Mud rise pump
- → Petrochemical fluids
- → Cavern pumps



Submersible Pump Technology

Our Submersible Pumps and Motors offer the following key benefits:

- → Less space compared to Vertical Turbine Pumps (VTP)
- → Designed for high efficiency
- → Lower total cost of ownership
- → Environmentally-friendly, water/glycol-filled motor
- → Easy alignment
- → Low maintenance
- → No flooding risk
- → Low noise
- → Condition monitoring available

Air release valve

Explosion-proof junction box available

Header tank available
Provides condition monitoring of motor fluid

Non-return valve
Can be located at deck level or at the last pump bowl discharge

Pump discharge elbow

Column centralizers

Discharge columns

Efficient multi-stage pump
Hydraulic designs optimized for high efficiency

Pump suction

Suction strainer
Keeps particulate from entering the pump

Submerged electrical motor
Standard or Inverted configuration

Fluid bearing for high reliability
No external lubrication required

Hypochlorite dosing ring available

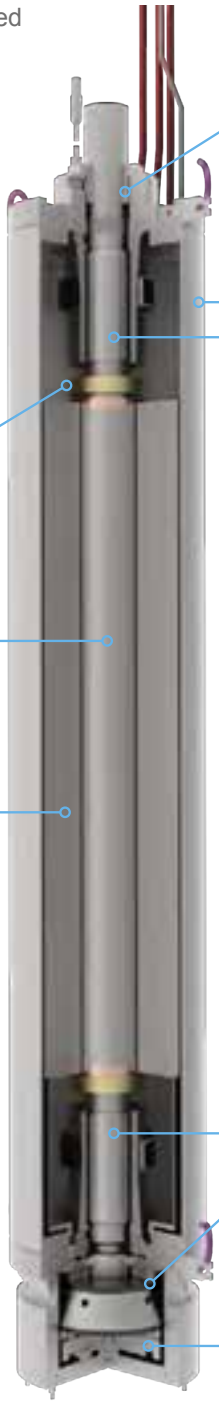
Fluid flow
Pumped fluid is drawn in and around the outside of the motor, providing motor cooling before reaching the pump suction

Standard and Inverted configuration available

Submersible Motor Design as a Core Competency

At Hayward Tyler, we have been designing fluid-filled motors for over 100 years and offer both standard and highly-engineered solutions to suit your applications.

Our motors are designed to offer high reliability and low maintenance.



KEY FEATURES

- → Water/Glycol fill as standard
- → Oil-filled available
- → Non-welded stator shell allows for stator removal for maintenance
- → Commonality of parts
- → Standard parts, resulting in quick turn-around for spares

Technical Data

PUMP SIZE

Flow	up to 13,000 m³/hr (60,000 USgpm)
Head	up to 400 m (1500 ft)

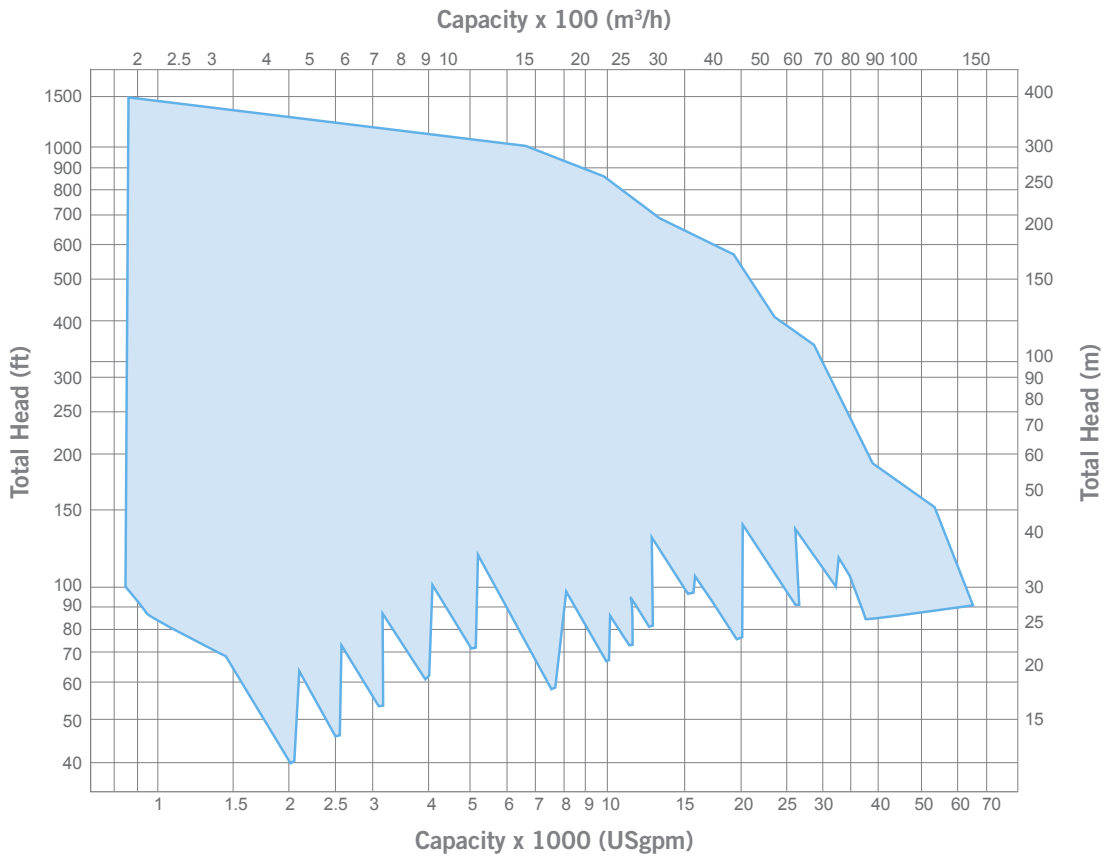
MOTOR SIZE

Power	3,000 kW (4,000 HP)
Poles	2/4/6/8 pole
Frequency	50/60 Hz
Voltage	380-13,800V

STANDARDS

Design Standards	ANSI / HI / EN / ASTM / DIN / ISO / CE / API 610
Hydraulic Standards	ANSI / HI / ISO / API 610 / NFPA 20
Electrical Standards	NEMA / IEC / IEEE
Certifications	DNV GL / ABS / CSA / ATEX / BV
Quality	ISO 9001 / NORSOK

PERFORMANCE CURVES



Stay on top of your pump & motor's health and maintenance

With Hayward Tyler's S200 and P100 Condition Monitoring Systems, you can easily and conveniently monitor your equipment's condition and its mechanical, electrical, and operational health using the Model-Based Voltage and Current (MBVI) technique.

Identify and/or diagnose a wide range of specific failure modes and faults:

- → Mechanical unbalance/ misalignment
- → Bearing problems
- → Foundation looseness
- → Transmission looseness or rubbing
- → Monitor rotor bar breaks
- → Motor stator problems
- → Electrical odd and even harmonics abnormalities
- → Any other spectrum peak beyond the normal expected values

KEY BENEFITS

- → 24/7, real-time assessment of your equipment's health
- → Monitor from a distance and without disruption
- → Optimize the energy consumption of your equipment
- → View essential data all in one place
- → Forecast your equipment's condition 1 to 3 months into the future
- → Avoid unnecessary maintenance and stop unexpected breakdowns

For further information on Hayward Tyler's performance-critical pumps and motors for submersible applications, please contact us or visit **www.haywardtyler.com**

HAYWARD TYLER

Engineered solutions for the global energy sector

USA
Hayward Tyler Inc.
Vermont, USA
+1 (802) 655 4444
vermont@haywardtyler.com

ENGLAND
Hayward Tyler Ltd.
Luton, England
+44 (0)1582 731144
luton@haywardtyler.com

SCOTLAND
Hayward Tyler Fluid Handling
Glasgow, Scotland
+44 (0)1355 225461
glasgow@haywardtyler.com

INDIA
Hayward Tyler India
Delhi, India
+91 11 4575 6831 / 4507 5971
delhi@haywardtyler.com

CHINA
Hayward Tyler Kunshan
Kunshan, China
+86 512 57723311
kunshan@haywardtyler.com

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