

POWERJACKS

Actuation, Lifting & Positioning Solutions for the Oil & Gas Industry

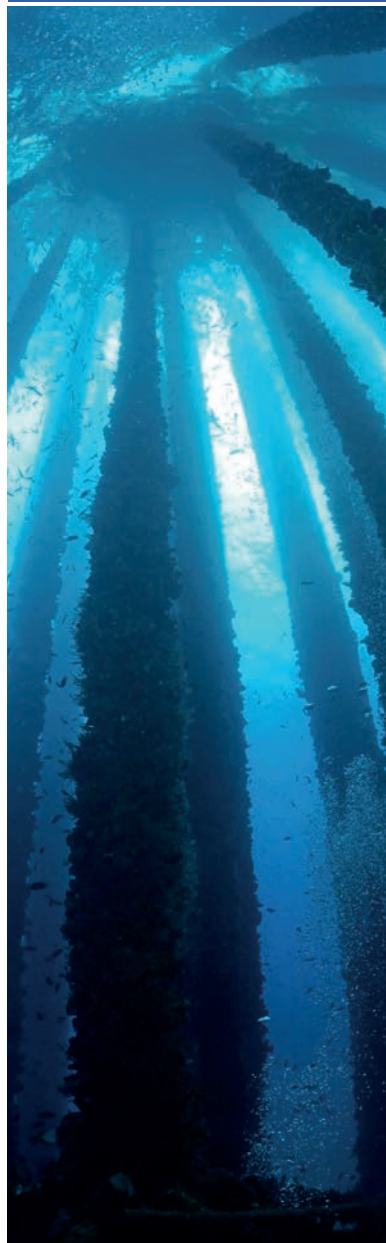
Onshore



Offshore

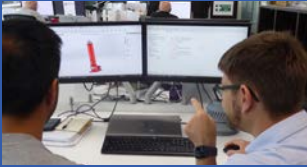


Subsea



Marine





Capability

OUR EXPERTISE HAS BEEN BUILT ON A HISTORY OF MORE THAN 100 YEARS OF ENGINEERING, CRAFTSMANSHIP, VISIONARY DESIGN, QUALITY MANUFACTURE AND CUSTOMER CARE.

Power Jacks is the leading UK manufacturer of electro-mechanical actuation, lifting and positioning solutions. It specialises in the design of bespoke systems for application in industrial automation, energy, defence, transport and civil engineering.

Headquartered near Aberdeen in the UK, the company is the UK's largest screw jack manufacturing facility, that uses the latest engineering technologies to deliver quality products (ISO 9001) that offer reliability, performance and economy.

Power Jacks deliver this high quality service in a safe (ISO 45001) and environmentally friendly (ISO 14001) working environment thanks to the highly trained, flexible and motivated teams that work throughout the business driving the company to higher levels of performance.

We know our customers demand our engineering expertise to help find a solution for their applications. We take pride in designing and delivering the best solution using standard or special designs that help improve your business.

Our Vision is to become the partner of choice for our products globally.

Our Mission is to provide high quality precision actuation, lifting & positioning solutions.

Global Reach

UK HEADQUARTERS, 3 STRATEGIC SALES OFFICES & A NETWORK OF 25 DISTRIBUTORS WORLDWIDE PROVIDING AUTOMATION SOLUTIONS TO CUSTOMERS IN 80 COUNTRIES.

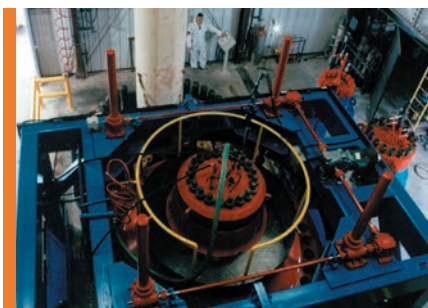


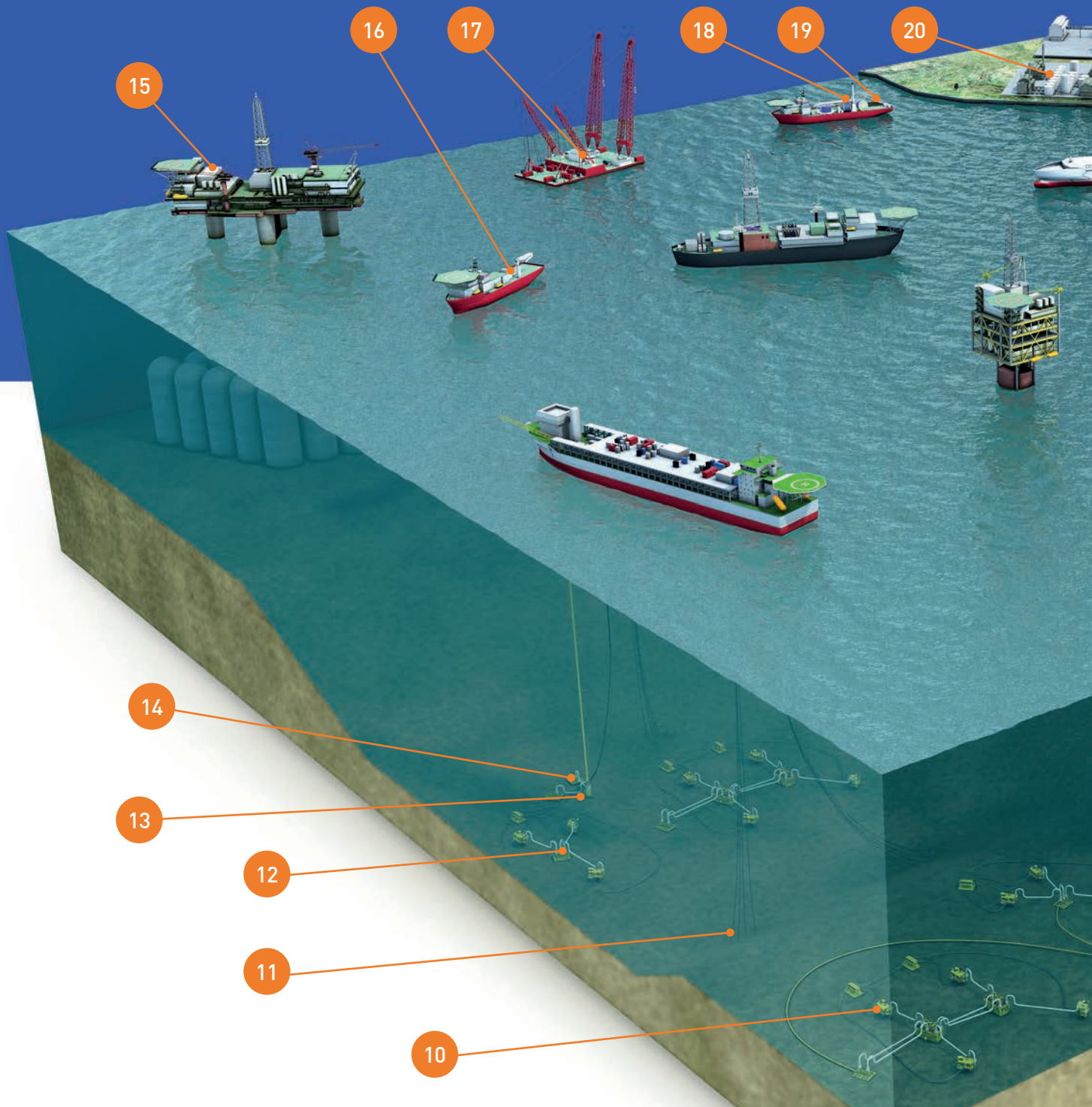
Engineered Solutions

WHEN THERE CAN BE NO COMPROMISE ON PERFORMANCE, QUALITY, RELIABILITY AND DURABILITY. TRUST POWER JACKS ENGINEERED SOLUTIONS FOR THE MOST DEMANDING OIL & GAS APPLICATIONS.

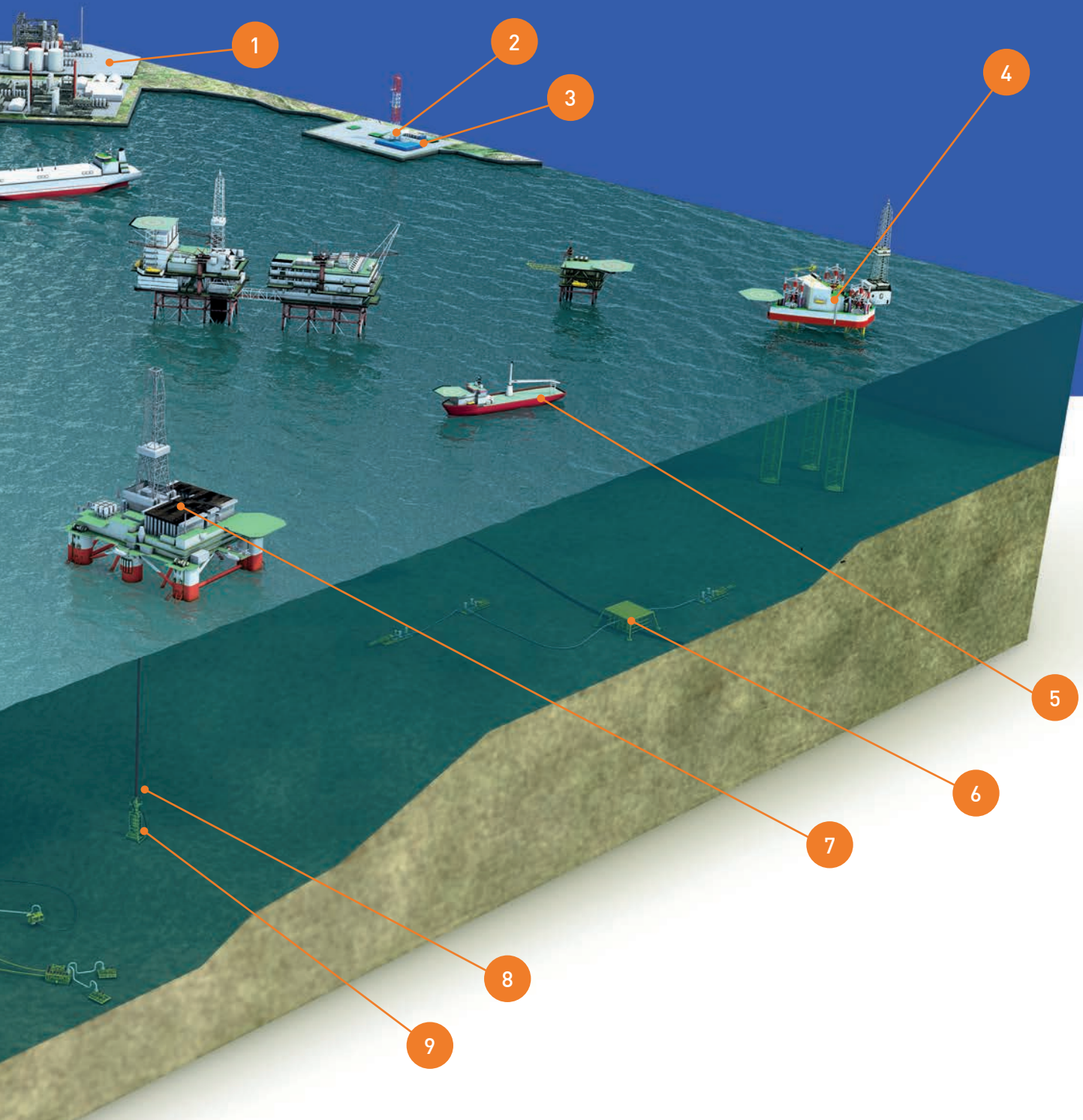
Our linear motion and gearbox solutions are used onshore, offshore, subsea and marine with each design engineered for specific operational applications. Our bespoke design service allows Power Jacks to provide standard product, customised product or start from scratch. Design features can include requirements such as auxiliary drives, high corrosion resistance, special gear ratios, tailored interface & mounting arrangements and submersible options. Whatever the application, our innovative and experienced team of engineers will work with you to meet the challenge.

Typical applications for our products are found on pipe laying ships, subsea risers, retrievable chokes, pressure vessel lid lifts, FPSO mooring systems, Tool Deployment Units, cable laying vessels, and many more.





Item	Description	Area	Product
1	Hydrospace Test Centre - Pressure Vessel Lid Raise & Lower	Onshore	Screw Jacks
2	Land Rig - Automatic pipe feed mechanism	Onshore	Screw Jacks
3	Swab Valve - gate valve operation mechanism (hand operated)	Onshore	Bevel Gearbox
4	Jack-Up Rig, Leg Chock fixation System	Offshore	Screw Jacks
5	Tension Adjustment For Subsea Cable Laying	Marine	Screw Jacks
6	Subsea Pig Launch/Receiver Positioning	Subsea	Screw Jacks
7	Refurbishment of drill floor cement area gearboxes	Offshore	Reduction Gearbox
8	ESP Umbilical Connector Actuator	Subsea	Screw Jacks
9	Raise and lower subsea caisson	Subsea	Screw Jacks
10	ROV operated clamp connector	Subsea	Bevel Gearbox



Item	Description	Area	Product
11	Locking pin push-pull actuator for FPSO mooring chain	Subsea	Linear Actuator
12	Multi Quick Connector plate drive mechanism (ROV operated) for MQC Parking Recepticle	Subsea	Screw Jacks
13	Subsea Riser release mechanism	Subsea	Screw Jacks
14	ROV operated clamp release mechanism for pipe connector	Subsea	Screw Jacks
15	Roof raise & lower system	Offshore	Screw Jacks
16	ROV Launch & Recovery system	Marine	Linear Actuator
17	Barge cargo clamp / chock fixation positioning	Marine	Screw Jack
18	Ladder deployment for Ramp access system for Cable or Pipe Laying Ship	Marine	Linear Actuator
19	Positioning of Top Track Straightener for Pipe Laying Ship	Marine	Screw Jacks
20	Emergency Shutdown Gate Valve Actuator	Onshore	Linear Actuator

Automation

PRECISION SCREW JACKS, ELECTRIC LINEAR ACTUATORS, LEAD SCREWS, BEVEL GEARBOXES, JACKING SYSTEMS & DESIGN SUPPORT SERVICES.

Power Jacks range of precision products and services provides an alternative to hydraulic based solutions for high load actuation, lifting and positioning applications (10kN to 3500kN and above).

Our products have the advantage of improved performance and safety at a lower cost. Clean and simple to install, easier to control with less waste and environmental impact. Our products support the move to completely electro-mechanical systems which hold the load in place in the event of power failure and pose no risk of hydraulic fluid leaks



SCREW JACKS

Ideal for use as a single jack or in multiples as a jacking system to push, pull, tension, lock, unlock, tilt, pivot, roll, slide and lift or lower loads, anything from a few kilos to thousands of tonnes.

- Capacities up to 2000 kN (200Te) as standard
- Capacities up to 35000 kN (3500Te) on request
- Machine Screw, Ball Screw and Roller Screw Jacks
- Translating & Rotating screw configurations
- Standard material or full stainless steel screw jacks
- Self-Locking (only use power when moving)
- Anti-rotation mechanism for unconstrained loads
- Anti-Backlash or Zero-Backlash mechanism for axial positioning
- Dual Nut (safety nut) fail safe load holding option
- Shock load rated units



LINEAR ACTUATORS

Based on our lead screw and screw jack technology these fully enclosed electro-mechanical linear actuators can be supplied with or without integrated electric motors and feedback devices.

- Capacities up to 400 kN (40Te) as standard
- Capacities up to 1000 kN (100Te) on request
- Machine Screw, Ball Screw and Roller Screw actuators
- Standard material or full stainless steel actuators
- Self-Locking versions available
- Anti-rotation mechanism in ram for unconstrained loads
- Zero-Backlash mechanism for axial positioning
- Dual Nut (safety nut) fail safe load holding option
- Shock load rated units



LEAD SCREWS

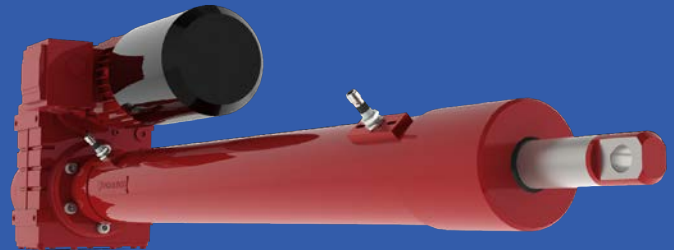
We can manufacture Whirled, Rolled and Ground screw thread to your requirements whether for fastening systems, winches, winders, valves, gates, screw conveyors to name a few.

- Planetary Roller Screws for high performance applications.
- Trapezoidal, Sharp, Butress, Knuckle, Coarse, Reverse / Diamond thread profiles
- Multi start threads with 1, 2, 3 up to 50 threads
- Variable pitch threads
- Screw lengths from 0.01m up to 20m
- Screw diameters from 10mm to 300mm
- Internal screw threads up to 2000mm long
- Customer specific thread profiles

KEY DESIGN FEATURES AVAILABLE FOR ALL LINEAR & ROTARY MOTION PRODUCTS

- Full range of anti-corrosion options
- A range of Subsea designs available with proven depth ratings up to **3000m subsea**
- ROV drive interfaces
- **Marine** rated units
- **Arctic** rated units
- **Desert** environment rated units
- **Tropicalised** Units
- **ATEX** rated units
- Low (-65°C) to High (+250°C) temperature solutions
- Full range of feedback devices for speed, position and load monitoring control
- Special custom design service

If you've got a requirement not mentioned in this brochure then challenge us, as we've either done it already or have the engineering know-how to deliver you the best solution.



BEVEL GEARBOXES

Distribute mechanical rotary power throughout your drive system with these bevel gearboxes.

- Compact Bevel Gearbox Design
- 2-way, 3-way & 4-way Configurations
- Solid Shaft & Hollow Shaft
- Gear Ratios: 1:1, 1.5:1, 2:1, 3:1 & 4:1
- Torque Ratings up to 7000 Nm
- SG Iron Housing as Standard
- Full stainless steel on request
- Special Gear Ratios Available



JACKING SYSTEMS

Jacking system arrangements or configurations can be built in many formats with the use of screw jacks, bevel gearboxes, motors, reduction gearboxes, drive shafts, couplings, plummer blocks and motion control devices.

Four of the most popular system configurations are the 'H', 'U', 'T' and 'I' configured jacking systems.

Jacking Systems have 2 main features:

1. They allow for the movement of large loads driven by a single motor.
e.g. 4 x EMT1000 screw jacks arranged in a screw jack system could move a load of 400 Te (4000kN).
2. Support loads evenly over a relatively large surface area
e.g. 20Te load over a 24m² area using four screw jacks with 6m x 4m centre spacing.



Multiple screw jacks can be linked together mechanically or electrically. The latter is useful if there is no space for linking drive shafts. This can also be expanded so that multiple mechanically linked jacking systems are synchronised / controlled electronically allowing linear motion solutions to be provided on a massive scale. Such as shiplift systems where typically 20 - 60 screw jacks are electronically synchronised to lift up to 8000Te vessels for transportation on the dockside.



DESIGN SUPPORT

For product or project development Power Jacks highly experienced team of design engineers are available to help you achieve the best solution for your application. Our speciality is in designs requiring mechanical or electro-mechanical linear or rotary motion solutions whether at a component part or complete system level.



Power Jacks specialises in the design and manufacture of precision linear actuation, positioning and lifting equipment.

Our products are supplied globally across many sectors including Industrial Automation, Energy, Transport, Defence and Civil.

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