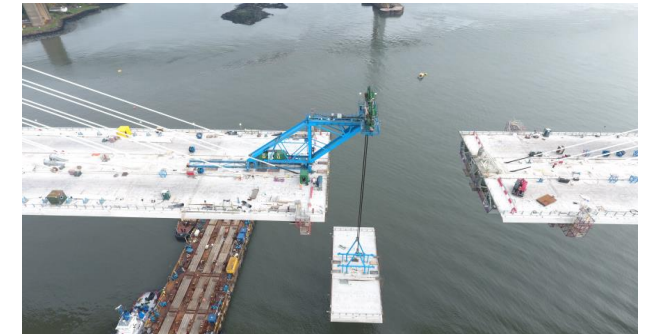




**HYDROLUTION STRAND JACKING  
PLC SYSTEM**

- ❖ **HYDROLUTION a Singapore registered brand which is owned by Hydrolution Technologies Pte Ltd.**
- ❖ **HYDROLUTION specialises in both high and low pressure hydraulic cylinders as well as other related tools and equipment. All Hydrolution products are CE Certified and widely accept in global industrial markets.**
- ❖ **HYDROLUTION Hydraulic Cylinders are available in various design or customized to meet projects demand and requirement with CE Certified.**
- ❖ **We build high quality Hydraulics Cylinder and other Hydraulic Maintenance Tools to meet your high pressure application with reasonable and competitive prices to meet the current market demand and help customer to get their Return Of Investment fast.**

- **HYDROLUTION Technologies provides customers with tailored solutions, combining hydraulic, steel fabrication and electronic control technology with engineering and application knowledge. This results in innovative hydraulic systems for controlled movement and precise positioning of (Heavy) structures.**



# What is STRAND JACKING System

Using Strand Jack has becoming the convenient method of lifting a boiler drum/steam drum, thruster installation/removal and etc all over the world. Multiple strands in two or more strand jacks slowly but surely lifts the drum to its position. This is a simple method to lift the heavy weight.

Except for the preparation phase, only one or two operators are required for lifting the drum. Multiple strand jacks offer redundancy, reliability and safety. Using Strand Jacks is easier to install than a winch system and less costly than using a very heavy crane.

The Strand Jack is located on temporary beams on top of the boiler structure above the final position of the drum. Two or four jacks are used based on the lifting arrangement. Lateral movements of the jacks are possible by mounting them on roller skids. This is necessary to maintain verticality and to avoid interference with the supporting structure.

The jacks itself uses multiple strands, 10 to 14 depending on the load and jack capacity. The lower ends of the strands connect to blocks that fix one end of the strands. The other end of the strands is free and moves through the jack. The blocks connect to the lifting lugs of the drum by links or grommets.

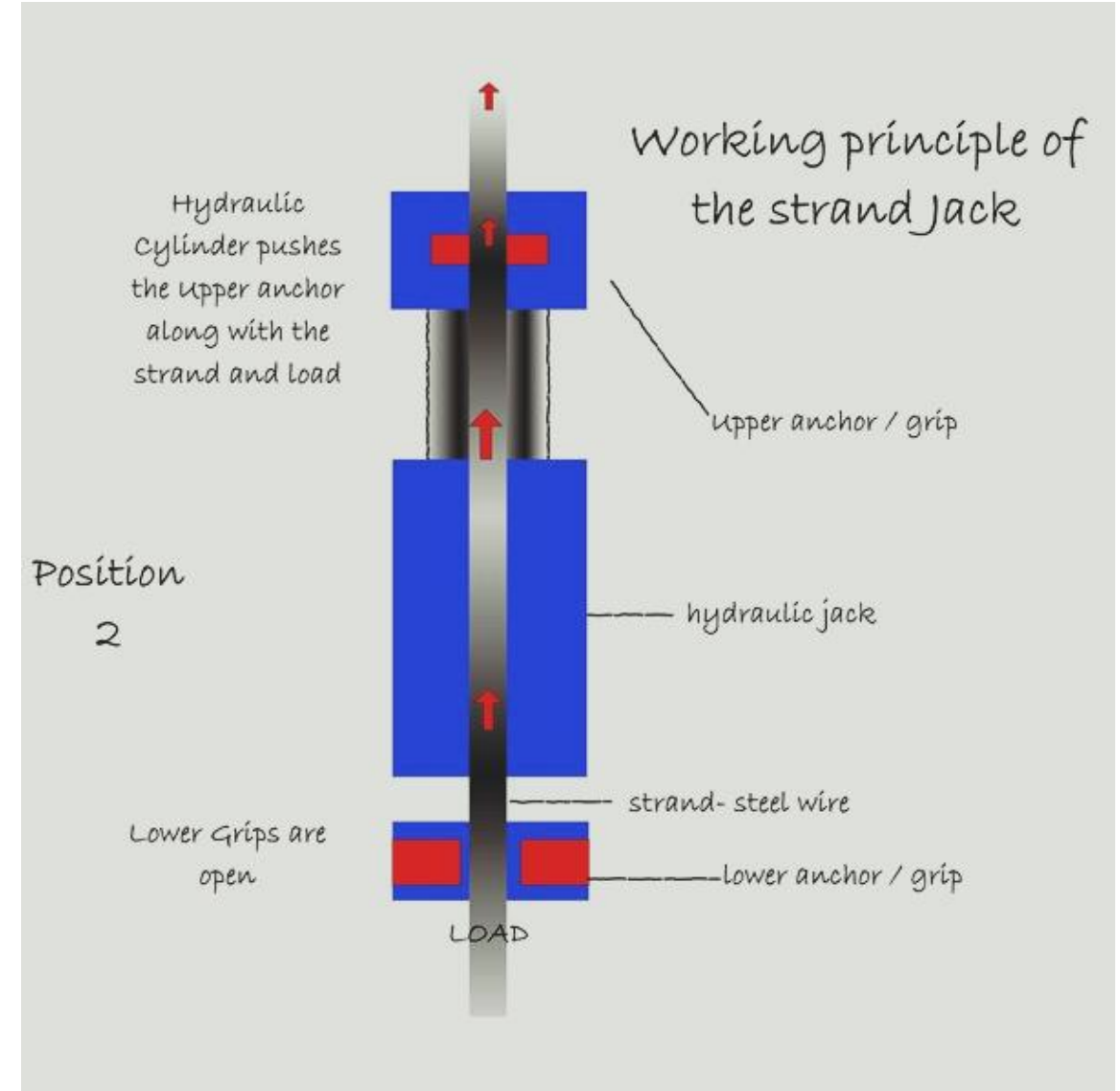
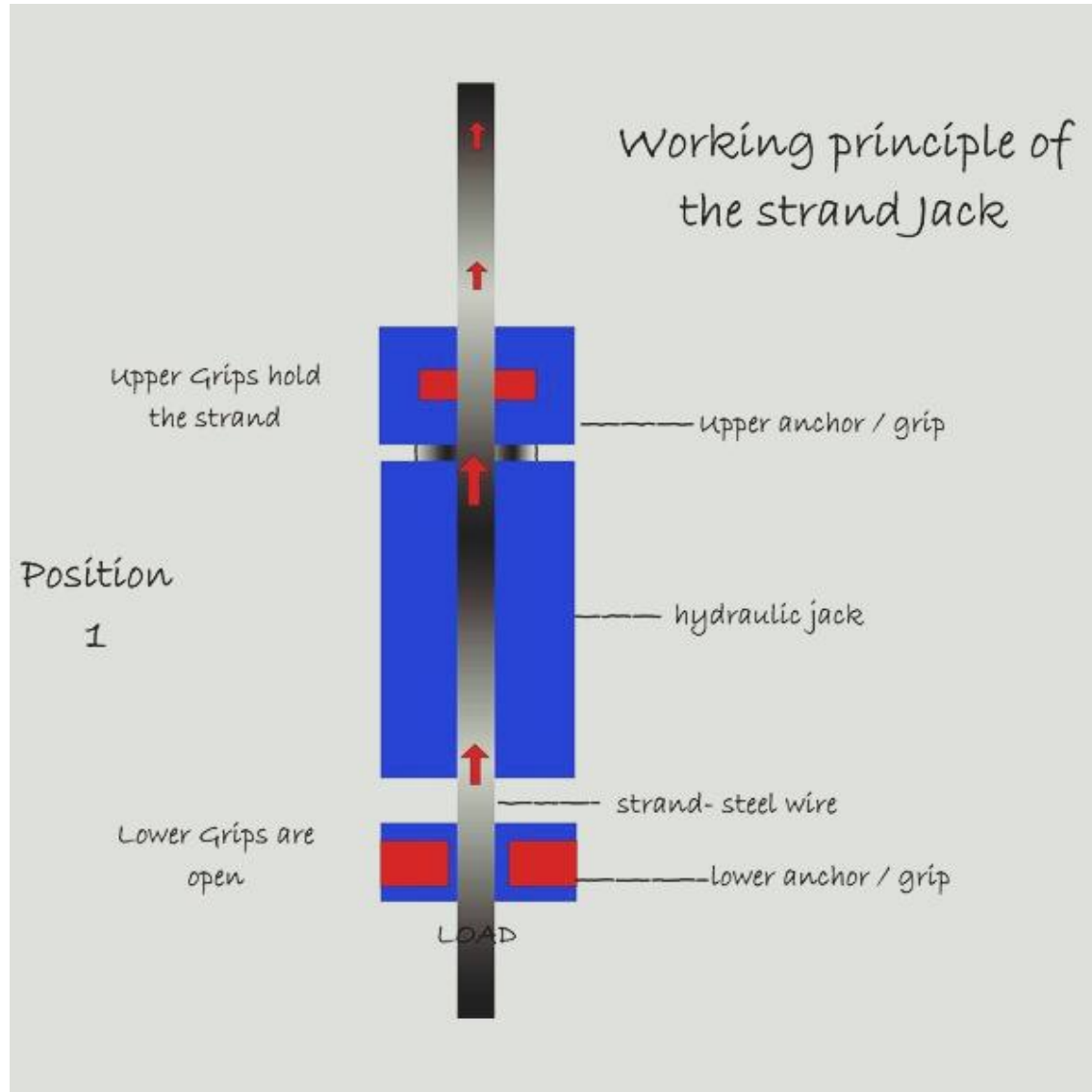
The strands are made of high strength special steels.

Following basic equipment is required before strand jack operation can start:

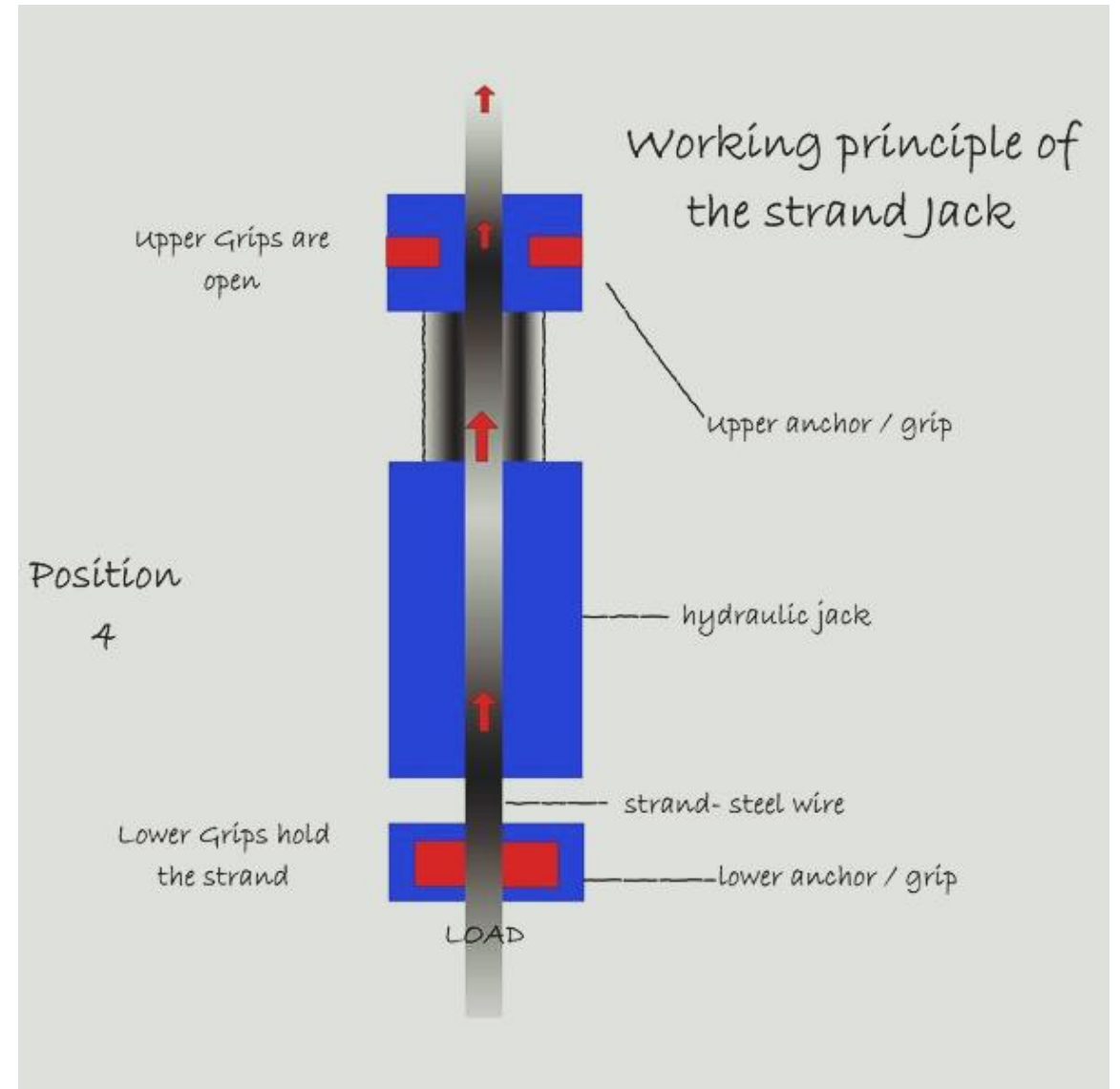
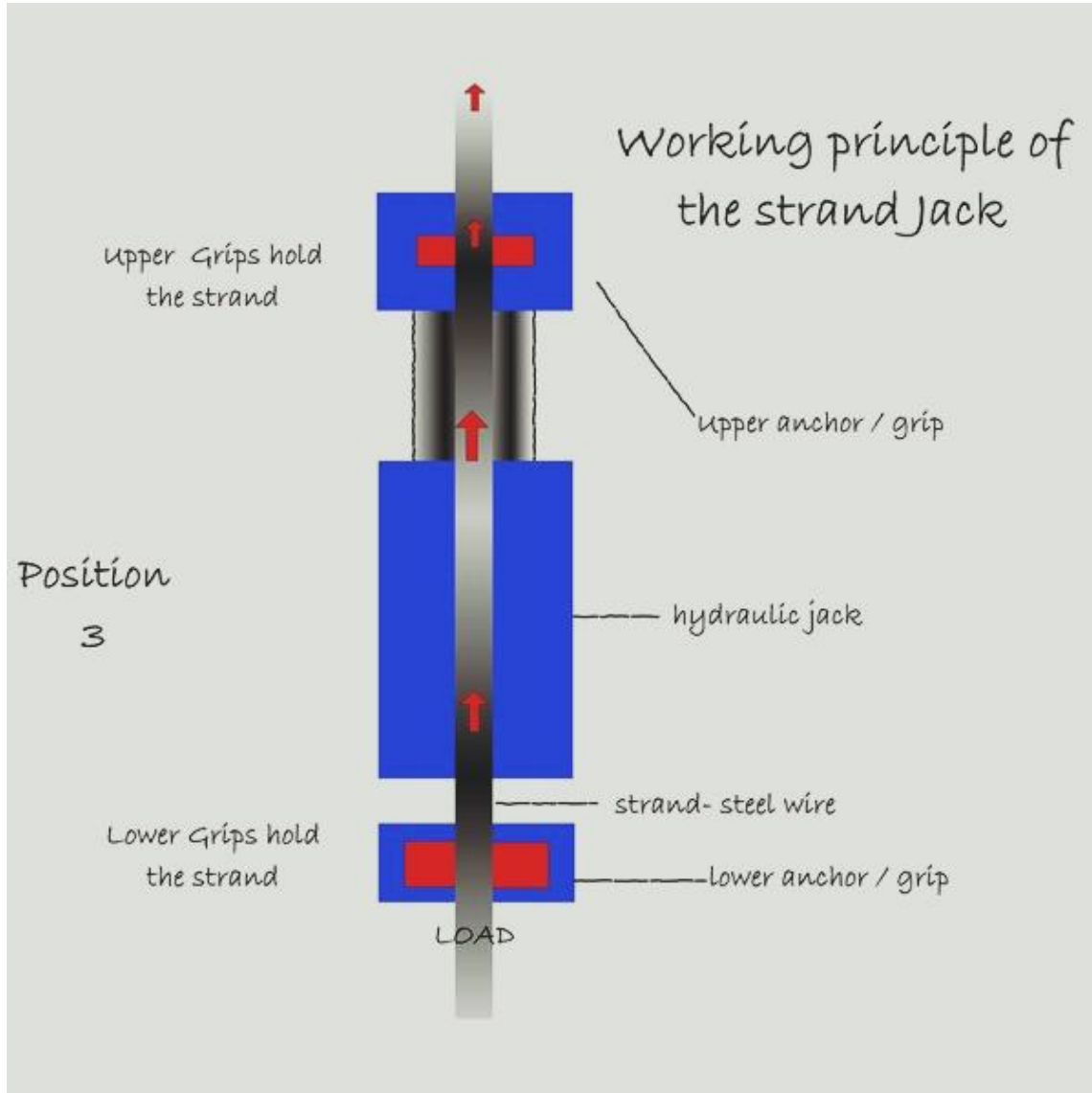
- A. The strand jack itself
- B. Power packs
- C. Fixed anchor
- D. Strand & dispenser
- E. Control system
- F. A power source
- G. **Optional**
  - Strand guide (palm tree)
  - Re-coiler
  - Tensioning device



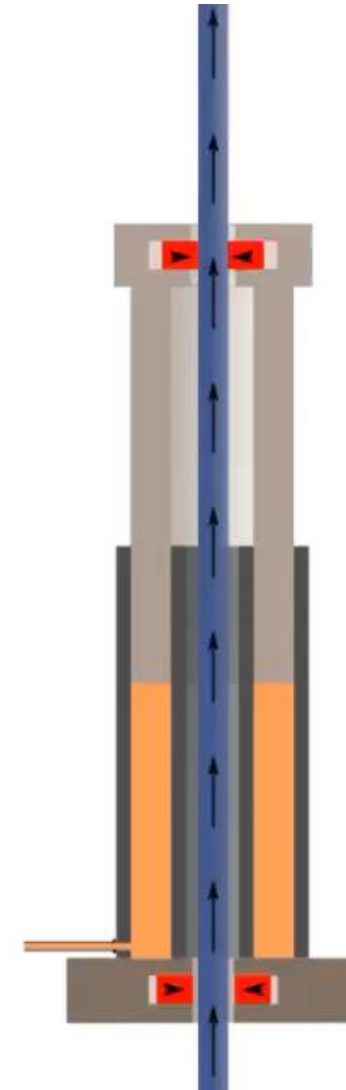
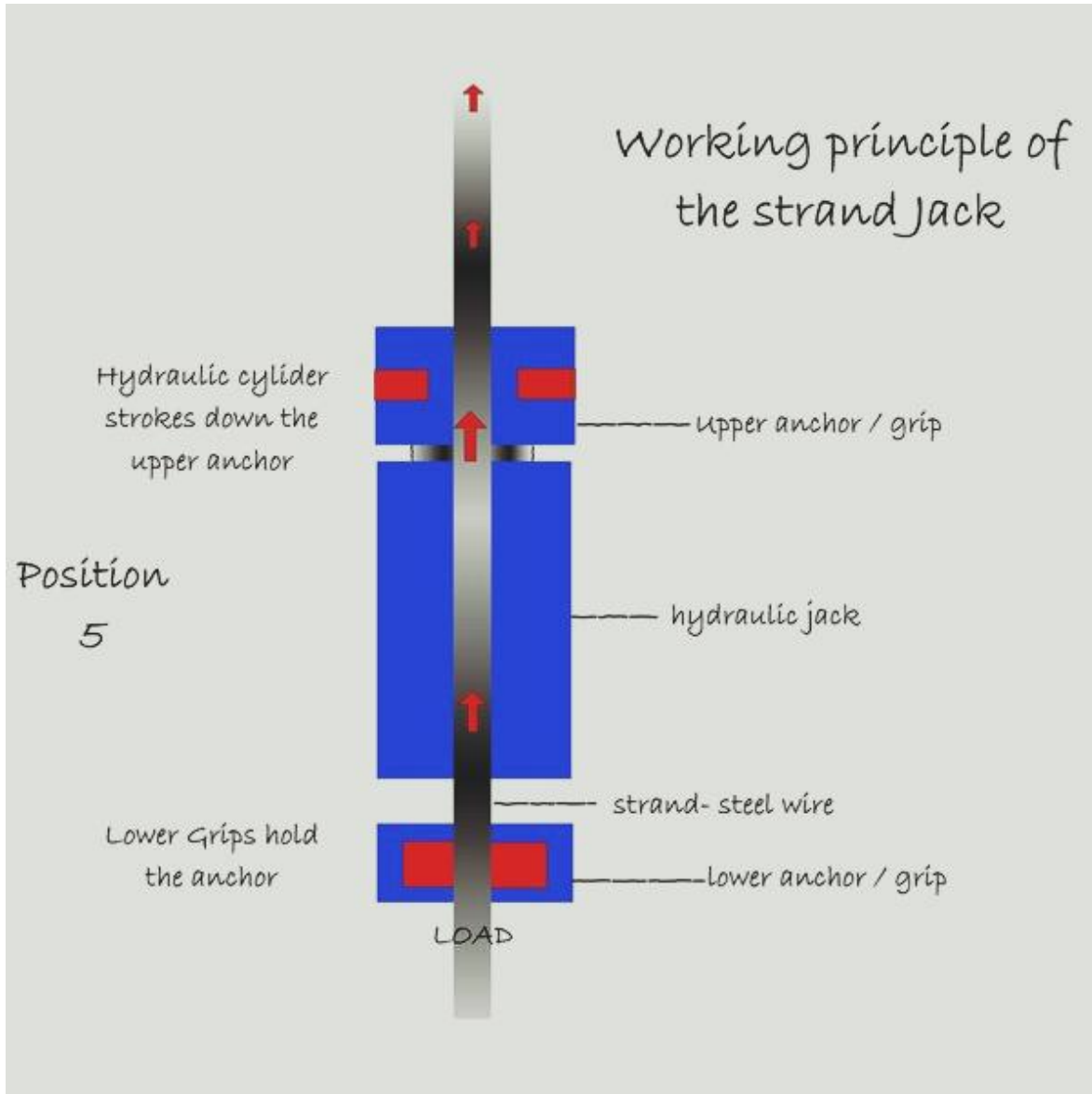
# Working Principle Of Strand Jack



# Working Principle Of Strand Jack



# Working Principle Of Strand Jack







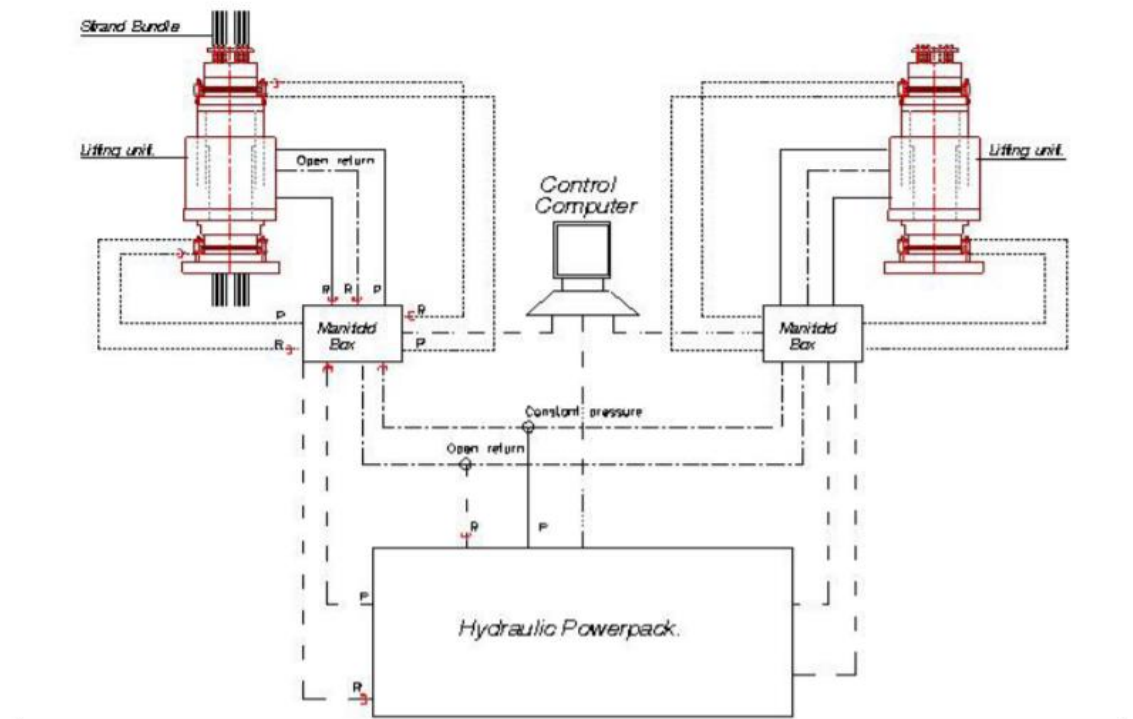
# Strand Jack System Configuration

Compact, liable and economic solutions for every lift. Due to its compact design, it is very suitable in areas where conventional equipment cannot be placed or space constraint example like Crane.

Since all lifting operations are remotely controlled and monitored, people can stay in a safe area on the ground.

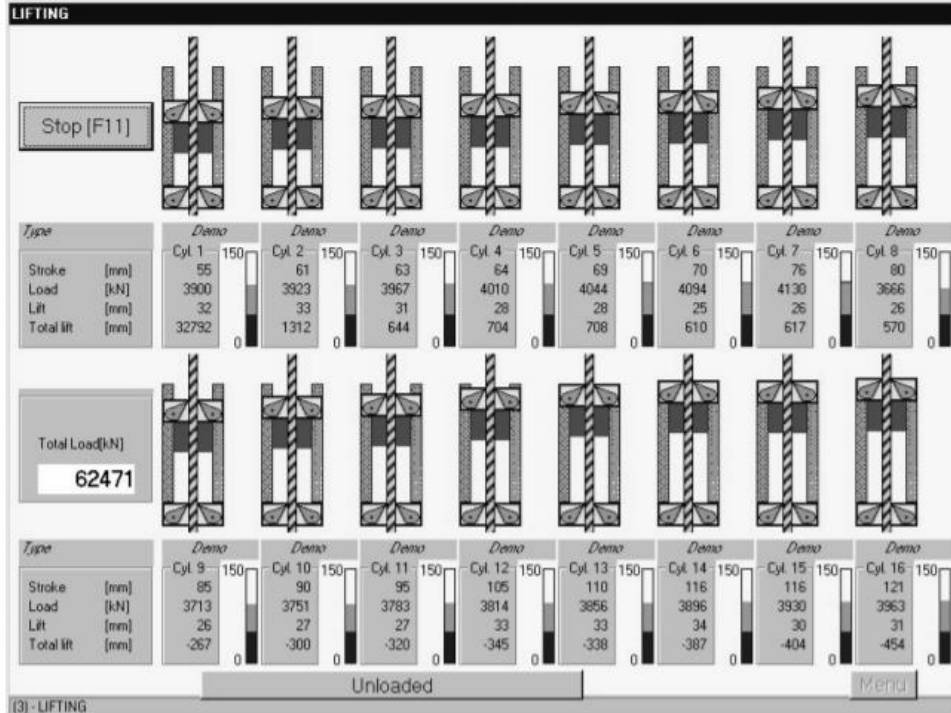
HYDROLUTION system is configure as the following require items:

1. The strand lifting unit HSJ Series (Using Premium UK/Jap Parts)
2. The compact strand bundle
3. The manifold box
4. The hydraulic power pack which using for 2 Jacks.
5. The control PLC computer (Omron)
6. 25mtrs hoses & communications cables



# Strand Jack System Configuration

## Console layout



- Stroke in mm ; Accuracy position of the cylinder.
- Load in kN; Actual load on the piston.
- Lift in mm; Movement of the loaded piston.
- Total lift in mm; Summary of all movements.

## OMRON PLC Touch Screen

Lifting with 12 jacks simultaneously, fully controlled by PLC System

## HYDROLUTION STRAND JACKING PLC SYSTEM

HYDROLUTION is an independent company, registered in the Singapore, carrying out bridge design and construction engineering together with design and supply of heavy lifting Hydraulic equipment for the construction of bridges, refineries, power stations, wind farms, offshore drilling rigs, large roofs and other large pre-assembled structures.

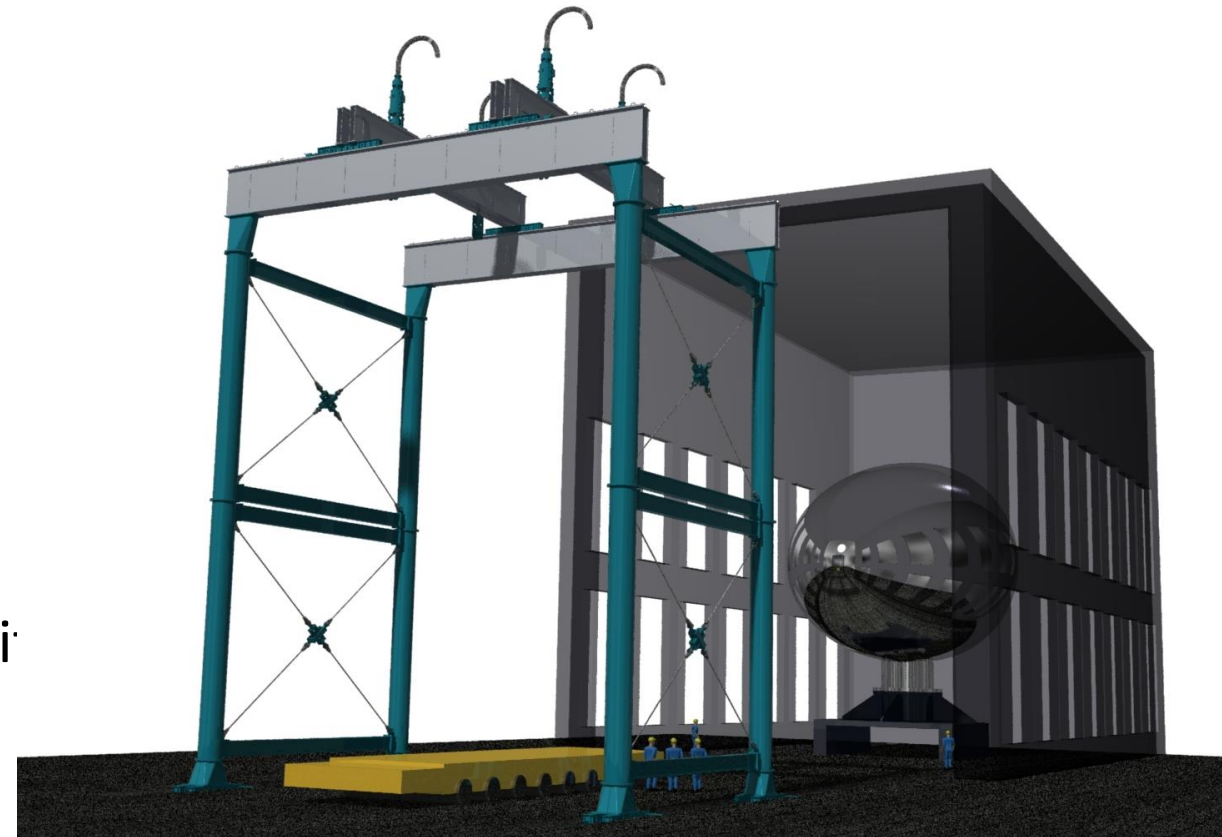
- HYDROLUTION Strand Jacking System are the choice for clients seeking precise synchronous control with heavy lifting capacity in an economical, compact, and reliable foot print.
- Automated locking - unlocking operation.
- Strand Preloading System
- Two strand sizes: 0.62 in (15.7 mm) and 0.71 in (18 mm).
- Telescopic strand guide pipes prevent bird caging.
- Lifting anchor are included with all strand jacks.
- Lifting/Pulling Speed 4, 6, 8 10m/hr (Able to custom to project requirement)

PART NUMBER	CAPACITY (Ton)	STROKE (mm)
HSJ-030500	30	500
HSJ-045500	45	500
HSJ-060500	60	500
HSJ-100500	100	500
HSJ-180500	180	500
HSJ-200500	200	500
HSJ-300500	300	500
HSJ-500500	500	500
HSJ-650500	650	500
HSJ-850500	850	500
HSJ-1000500	1000	500
HSJ-1250500	1250	500



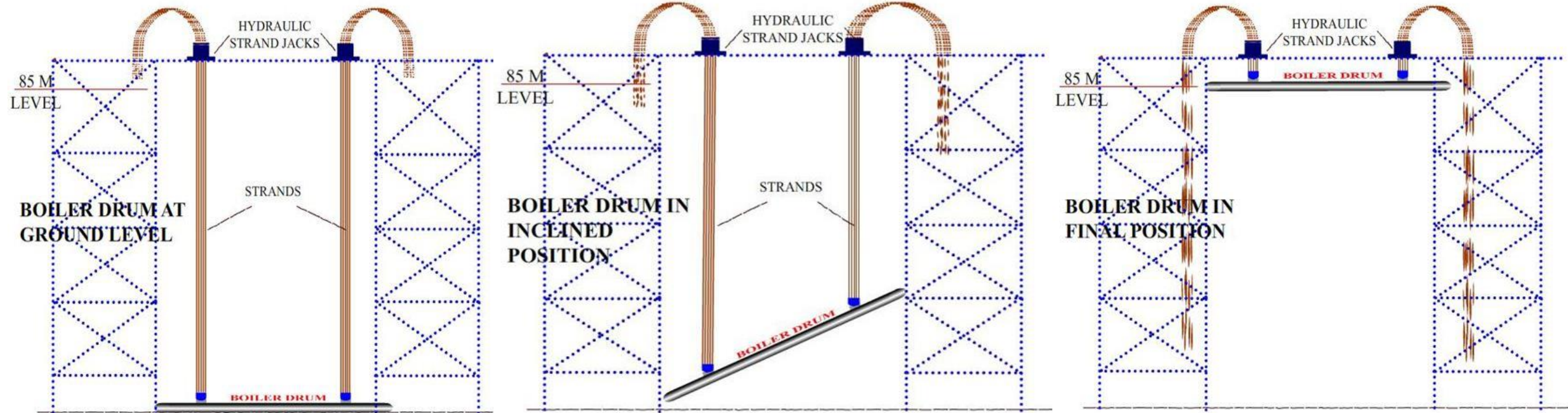
# Advantage & Benefit Against Winch

- Ability to operate in limited access spaces
- High accuracy & easy to control by PLC
- High capacity in compact equipment
- Unrestricted operator position
- Lower Costs
- Higher Demand For More Future Projects
- Cost efficient: low investment, high capacity
- Simple operation
- Durable: Excellent wear properties



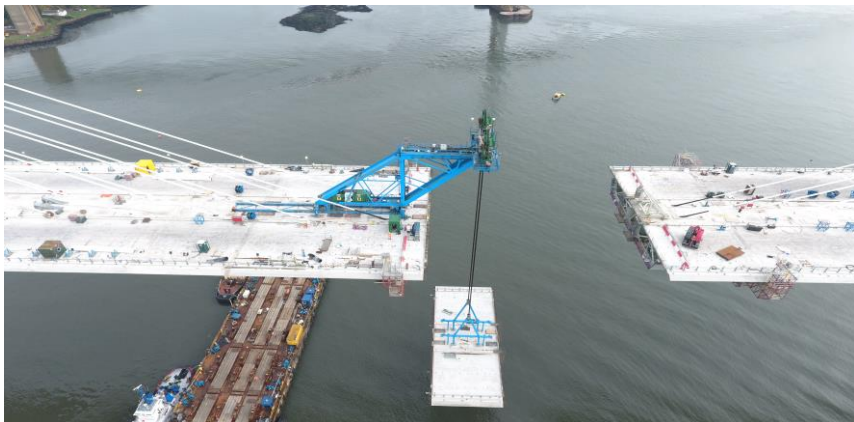
Simulations test for head of wind mills, lifting and skidding

# Strand Jack Application (Powerplant)



Lifting Of Steam Boiler/Drum

# Strand Jack Application (Infrastructure)



**Bridge Segment Lifting**



# Strand Jack Application (Marine Offshore)



**THRUSTER INSTALLTION & REMOVAL**





# Strand Jack Application (Marine Offshore)



THANK YOU