JUMP - Jack-Up Maintenance Platform
Offshore systems

Access solutions for professionals

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The Introduction
The Palfinger systems JUMP offers safe, reliable and efficient access to the leg. Designed to allow inspection and all maintenance works such as blasting, painting and steel work repairs to be carried out. Driven by an onboard diesel powered HPU, the Palfinger systems JUMP requires no external power source from the rig.

The JUMP configurations include telescopic cranes, Aerial Platforms, supply & rescue platforms, full enclosure and ancillary power for hand tools, lighting etc.. The JUMP with its various designs is internationally patented.

The Issue
Inspection and maintenance on the legs of Jack-up Rigs is necessary at regular intervals for both maintenance and Class requirements. Conventionally, scaffolding towers are erected and/or rope access teams utilized, which requires an enormous amount of effort, workforce, time and money. To minimize this effort and increase the scope of achievable and safe offshore work, Palfinger systems developed the concept of JUMP.

The Solution
Climbing on the existing leg racks, JUMP is designed to provide easy access to the different makes and models of Jack up Rigs. The climbing mechanism is adaptable to Opposable or Single Racks and Triangular or Square Lattice leg types. The modular design allows different leg sizes and designs to be easily configured for.

Key Features
- Self Powered
- Quick Installation. Can remain in place during rig moves
- Climbing mechanism has 100% redundancy
- Opposable & Single Rack designs
- Internal foldaway platforms for horizontal brace work and around each cord
- Various options for JUMP configuration including cranes, Aerial Platforms, auxiliary, power supply, full enclosure, waste collection and Zone 2 Rated
- Allows major leg work to be safely conducted during operations

JUMP allowing the full range of inspection & repair works
Transport and Assembly

After completed assembly and testing the JUMP is dismantled in modular units and loaded on a standard truck for transport. Further pre-assembly can be effected at the destination – pier and/or dry dock. The mostly self-sufficient assembly on the leg can be supported by use of a Temporary Lifting Beam (TLB).

Depending on size, pre-assembly, mounting and type of the JUMP:

- Net assembly time: max. 18 hrs.
- Assembly of permanent enclosure: max. 6 hrs.
- Change of variable enclosure (ceiling and floor): max. 3 hrs.

Training

Once the installation on the rig is completed, Palfinger systems technically verifies the JUMP by checklists and test runs. Workers must go through a JUMP introduction and various health & safety checklists to ensure a safe operation.

Service

After each JUMP operation all parts are sent to Weng/Austria for checking and overhauling. Palfinger systems ensures all parts in good condition and well prepared for the next operation.

Planning and Organization

Because of the big variety of Jack-Up Rigs and the fact that every Jack-Up Rig is different in some details every request requires a good preparation. Palfinger systems put a lot of effort in planning and organization. Due to the fact that the JUMP is modular designed the time for planning and organization has been improved.

Project Management

Palfinger systems has its own project management team which prepares very carefully together with the customer and all other stakeholders every use of a JUMP. The Project Management guarantees a smooth preparation workflow and an optimized use of the JUMP in time.

Test phase

Before leaving the assembly plant in Weng/Austria every JUMP is tested. This special function and quality tests ensure that the customer is receiving a 100% functionable JUMP.
Environment
The JUMP can be equipped with an enclosure which on the one hand protects the environment from paint, grit and other substances used during operations and on the other hand guarantees the workers a weather-independent working environment.

Safety and Assistance
The JUMP is operating at high altitude. Dropped objects prevention guarantees reliable securing. Cranes and Aerial Platforms allow the workers a much better and safer access to the area of operations than with conventional scaffolding towers, which supports health and safety at the workplace.
**Time saving**

Easy transportability is guaranteed due to the modular design of the JUMP parts which can be transported with standard trucks. Quick connection is guaranteed as the modules are connected by double secured bolts, which allow a quick assembly and dismantling. The modules are already delivered preassembled to some extent. Some of the modules get pre-assembled on the quayside which minimizes the final assembly on the leg. Ready for use – within 18 hours net time.

Time savings in operation time: 40-50% for surface treatments like high pressure water jet blasting and painting, up to 80% for steel works like changing of anodes (4-6 anodes per hour), repairing of rack tool, ladders, position lights etc.

Fast on working location: By use of Palfinger systems Aerial Platforms and Knuckle Boom Cranes. Optimal working position (ankle of work).

High flexibility on different workscopes:

The combination of a self-propelled platform with Aerial Platforms/ Knuckle Boom Cranes and an enclosure allows the JUMP-operator a high flexibility on different workscopes.

Don’t miss to improve your economic competitiveness!

**Application Area**

The JUMP covers both on- and offshore application. The flexibility in regards to the common leg types e.g. Triangular or Square Lattice is a very important advantage.
JUMP

4 different types in modular design

**JUMP 01**

**Specification**
- 1/3 or 1/4 - open system
- Equipped with 1 bridge
- Without enclosure
- Equipped with Aerial Platforms and cranes
- Equipped with 2 Corner-Supply and Rescue Platforms

**Application**
For steelworks like changing of anodes, teeth & ladders repair

**JUMP 02**

**Specification**
- 3/4 - open system
- Equipped with 2 bridges
- Without enclosure
- Equipped with Aerial Platforms and cranes
- Equipped with 2 Corner-Supply and Rescue Platforms

**Application**
For steelworks at legs with bigger size and demand for higher lifting capacity like repair works of complete braces
**JUMP 03**

**Specification**
- Fully closed system
- Equipped with 3 bridges
- With enclosure
- Equipped with Aerial platforms and cranes
- Equipped with 2 Corner- Supply and Rescue Platforms

**Application**
- Blasting, painting works and steelworks for triangular leg types

**JUMP 04**

**Specification**
- Fully closed system
- Equipped with 4 bridges
- With enclosure
- Equipped with Aerial Platforms and Cranes
- Equipped with 2 Corner- Supply and Rescue Platforms

**Application**
- Blasting, painting works and steelworks for legs with square base
## Technical Information JUMP

### Environmental operating parameters:
- 75 to 90 km/h (approx. 40 - 50 kn)
- 4 to 6 m seas
- Acceleration of 0.6 m/s²

### Design & Certification:
- EN Codes & TÜV, DNV, ABS and Risk Analysis

### Steelwork safety factor:
- 2.5

### Work level:
- Vertical speed: 1-2.5 m/min. (3 - 8 ft/min.)
- Segment design: 6 - 18 m (20 - 59 ft)
- Weight per meter: 240 kg/m (161 lbs/ft) (only steel construction)
- Max. area: 135 m² (1453 sq ft)

### Supply and rescue level:
- Vertical speed: 12 m/min. (39 ft/min.)
- Weight per meter: 180 kg/m (121 lbs/ft) (only steel construction)
- Lifting capacity: 2000 kg (4410 lbs)

### Power supply:
- by Diesel Generators: per chord 68 kW, thereof 45 kW for climbing drive
- 3 Aerial Platforms and 1 loading crane (approx. 23 kW for tools)

### Max. equipment:
- (depending on JUMP-type):
  - 1 loading crane per corner modul 25 mto (245 kNm) (max. 4 units)
  - 3 working platforms per platform side 15 mto (147 kNm) (max.12 un.)
  - 1 supply/rescue – platform per corner modul (max. 4 units)
  - 2 chord platforms per rack (max 8 units)
  - 2 brace platforms per platform side (moveable, max. 8 units)

### Additional:
- toilette on board, battery-operated emergency light on board
- and catering place in the corner module
The Issue
Inspection, maintenance and repairs in many areas on Jack-ups, fixed platforms and semisubmersibles are difficult due to direct access and working at height. In many cases this work is carried out using man riding winches, temporary scaffold platforms or old existing walkways which them selves require maintenance. Some areas are only safely accessed during shut downs of operations or during shipyard visits. All conventional methods require personnel working at heigt with inadequate access resulting in safety issues and inefficiencies. To minimize this effort, Palfinger systems developed the Aerial Platform.

The Solution
Easily mounted (and relocated by use of multiple pedestal locations around the platform/rig), the adaptable and easily maneuvered crane column and basket arm allow work to be carried out safely, quickly and efficiently. Light weight and compact in the stored position, the Aerial Platform can be permanently mounted in key areas and use minimal space and deck load. Flexiblity, safety and easy access are the key points of the Aerial Platform.

Key Features
- Vertical reach of 15 m (49.21 ft), horizontal reach of 11 m (36.09 ft)
- Weight: 2700 kg (5952 lbs)
- Easily mounted & repositioned by use of multiple pedestals
- Hydraulic power requirements: 300 bar @ 45 l/m
- HPU can be provided as an option
- Safety features include: Personnel basket load monitoring
  Remote & local control
  Personnel safety return system

Technical Information Aerial Platform
Operating pressure: 300 bar
Control: Cable Remote Control
Basket capacity: max. 350 kg (771 lbs)
Range horizontal: ≈ 11 m (36.09 ft)
Range vertical: ≈ 15 m (42.21 ft)
Range of slewing arm: ≈ 3 m (9.84 ft)
Slewing range of telescopic boom: 0-400°
Slewing range of basket arm: - 180° / + 180°
Telescopic stroke: ≈ 2500 mm (8.2 ft)
The Issue
The enclosure represents an integrating component of the complete JUMP – System. It serves to prevent the environmental impact caused by the technologies that are used during the renovation of the leg, to increase the efficiency of the different renovation processes, to eliminate the time necessary for the setting of the tooling enclosures as well as to increase the operational safety of the board personnel.

The Solution
The JUMP – enclosure consists of a system with a movable external “Box” unit as well as the floor and ceiling tarpaulin, which are attached in working height of the internal legs, including the disposal facility for the waste material and water. Both the internal tarpaulins are relocated by means of the APF of the JUMP – system.

Key Features
- The external box – unit is connected either with the JUMP–platform during the process or with the racks of the legs in working position.
- Rapid installation of the internal tarpaulins in working height
- Furthermore, the enclosure consists of exhausters of the filtered exhaust air, air dehumidification units, cold light-illumination equipment and an emergency lighting system.

Technical Information
- Height of enclosure more than approx. 2 (max. 3) leg-sections
- Maximal wind speed 165 km/h (102 mph) if the JUMP has been retracted into the enclosure
- Air exchange factor approx. 8
- Air dehumidification approx. 2.4 l/h per unit
- Tarpaulin weight approx. 0.5 kg/m²
- Tarpaulin material resistant to tearing, flame generation, UV- radiation, etc.
- Tarpaulin connection via piping technique with lashing belts
- Box-structure in aluminium and/or steel construction
- Total weight of the enclosure approx. 8.5 t (83 kN) for medium-sized legs
The Issue
Checking and repairing of rack teeth, ladders, position lights and doing other steel repair works are difficult due to direct access and working at height.

The Solution
With the rack crane these kind of steel repair works can be done quickly at any time and any place – even offshore. In future there will be no need for entering a harbor just for the inspection and steel repair works. With the quick installation and easy operation it saves time and money.

Key Features
- Self propelled and totally independent
- Operation without enclosure
- Equipped with one Aerial Platform or Knuckle Boom Crane
- Can be equipped with 1 corner – supply and rescue platform

Technical Information
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<thead>
<tr>
<th></th>
<th>Rack Crane</th>
<th>Inspection Platform</th>
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</thead>
<tbody>
<tr>
<td>Work level:</td>
<td>1-2.5 m/min. (3 - 8 ft/min.)</td>
<td>12 m/min. (39 ft/min.)</td>
</tr>
<tr>
<td>Supply and Rescue level:</td>
<td>12 m/min. (39 ft/min.)</td>
<td>110 kg/m (74 lbs/ft)</td>
</tr>
<tr>
<td>Weight per meter:</td>
<td>180 kg/m (121 lbs/ft) (only steel construction)</td>
<td>6500 kg (14.330 lbs)</td>
</tr>
<tr>
<td>Lifting capacity:</td>
<td>2000 kg (4410 lbs)</td>
<td>by Diesel Generators 21 kW (12kW for operating tools)</td>
</tr>
<tr>
<td>Power supply:</td>
<td>by Diesel Generators 68kW (45kW for drive unit and crane or Aerial Platform 23kW for tools). Hydraulic Power Unit with 43kW for crane or Aerial Platform.</td>
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Worldwide Expertise and Innovation

Today Palfinger systems is a leading manufacturer offering a wide range of reliable marine cranes and working platforms for ship building/repair/maintenance and the offshore industry.

The corporate philosophy is based on the continuous drive for product improvements and innovative systems.