



SKIDDING SYSTEMS

Rig Skidding



One of two 760 tonne Gripper Jack Assemblies used to skid a skidbase at temperatures down to -39C . The Gripper Jacks also provide horizontal restraint against seismic forces.

Module Positioning



Gripper Jack in a construction yard used to position modules, structures, and equipment.

Ship Transfer



A pair of Gripper Jack Assemblies used to loadout ships of 4,000 tonnes with a roller beam transfer system.

Jacket Load Out



A Jacket Loadout system using multiple gripper jack assemblies to skid a 17,800 tonne offshore jacket.

Experience

Bardex Corporation has nearly half a century of heavy load moving experience garnered from diverse applications of skidding systems, including:

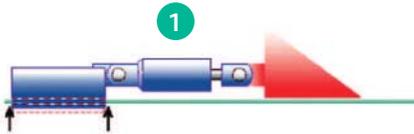
- Drill Rig Skidding
- Jack Up Cantilever Extension/Retraction
- Drill Rig Pipe Rack Skidding
- BOP Transporter Skidding
- Jacket Load Out
- Jacket Launching
- Module Load Out
- Module Positioning
- Shipyard Ship Section Positioning
- Bridge Section Positioning
- Nuclear Fuel Cell Positioning

Skidding Systems

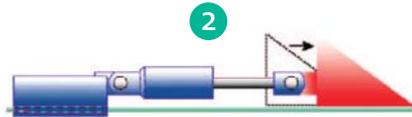
Bardex Skidding Systems are able to generate very large horizontal forces in confined spaces. The Gripper Jack concept is simple in operation but highly sophisticated in its ability to control and accurately position extremely heavy loads.

Bardex offers a total package for movement and continuous load control by combining skidding with leveling and restraining systems, as appropriate, in an integrated system design.

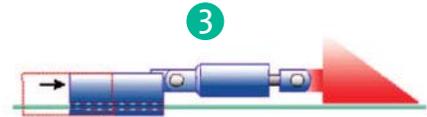
The Bardex Gripper Jack Operating Sequence



The Gripper is pressurized, locking it to the jacking beam.



The Cylinder is extended, moving the load.



Pressure is released from the Gripper and then the Cylinder is retracted.

The **Bardex Gripper Jack** is a compact and efficient means for applying very large traction forces to move heavy structures horizontally through substantial distances. The basic elements include a hydraulic gripper and a jacking cylinder. The gripper is adapted to, and mates with, the supporting flange or rail and effectively locks the gripper to the flange or rail reacting the jacking forces throughout each stroke. The jacking cylinder provides the horizontal force which moves the load.

Usually two or more gripper jacks are employed to move a load. The jacks either push or pull the load as selected, reacting thrust through direct and simple hydraulic means without force multiplying linkages. The gripper jack derives its clamping force from hydraulic elements which exert a clamping force on the jacking flange or rail when pressurized.

When activated the gripper clamps the flange edges of the skid beam anchoring the gripper. Thrust from the jacking cylinder ram, attached to the gripper, will then advance the load. The above diagram shows the three step cycle in a typical operating sequence.

1. The gripper is hydraulically locked to the jacking beam.
2. The jacking cylinder rod is extended (or retracted) moving the load a distance of one jacking stroke.
3. The gripper is unlocked and the jacking cylinder is retracted (or extended) to move the gripper to the next anchor point.

Each three step jacking cycle moves the load one jack-stroke length. The cycle may be repeated any number of times to move the load any required distance.



Pin Claw Jacks

Pin Claw Jacks can be used in applications where loads are light. The pin claw base, containing steel pins which engage in slots in the jacking beam, acts as a mechanical (non-hydraulic) anchor for the jacking cylinder. In operation, after the load is moved one stroke of the jacking cylinder, the cylinder retracts pulling the base forward and disengaging the pins. Cylinder retraction continues until the pins engage by gravity into the next set of slots anchoring the base for the next stroke of the cylinder to move the load. Skidding in the opposite direction is easily achieved by simply reversing the moveable pins within the base.



Piston Gripper Jacks

Piston Gripper Jacks are used where size and weight restrictions dictate a more compact design, or for very large loads. The Piston Gripper uses an array of separate, short-stroke, hydraulic pistons to clamp the jacking (skid) beam flanges. These grippers develop maximum clamping force with minimum size. Piston Gripper Jacks are smooth-acting, rugged and dependable for years of maintenance-free operation.



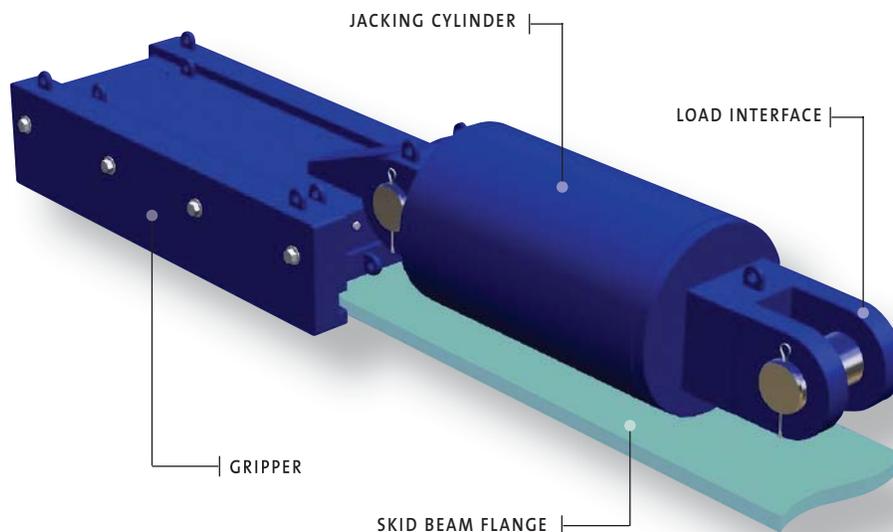
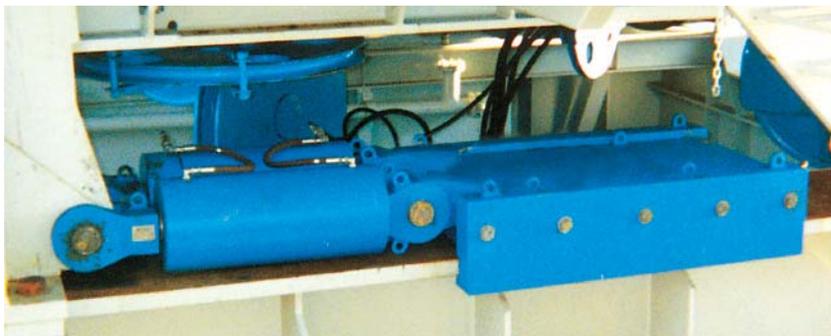
Hose Gripper Jacks

Hose Gripper Jacks use a bladder that, when pressurized, force steel clamps against the upper and lower surfaces of the edges of the skid beam flange, locking the gripper into place on the beam. The jacking cylinder is then pressurized to push or pull the load. Hose Gripper Jacks are particularly suitable where exceptionally wide jacking beams are involved. They are also available in an adjustable configuration to accommodate a range of jacking beams of different widths and thicknesses.

SKIDDING SYSTEMS

In 1963, Bardex Corporation (known then as Hydranautics) invented the combination of a hydraulic friction lock and double acting cylinder assembly, naming it the “Gripper Jack”. With that beginning, Bardex established a tradition of development and innovation in heavy load handling that today encompasses a wide variety of applications. Industries in which these products are operational include: offshore oil and gas, module fabrication, shipbuilding/repair, heavy construction, aerospace, industrial process, mining, nuclear plants, oceanographic, cargo handling, etc. Bardex systems have been approved by many classification societies including DNV, ABS, Lloyds, and Bureau Veritas

Hydraulic Gripper Jack Assembly



Corporate headquarters, engineering and principal manufacturing in Goleta, California. Engineering and sales offices in Houston, Texas and the United Kingdom. Sales representatives around the world. Immediate service worldwide



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