



## MOORING SYSTEMS

# THE BARDEX CHAIN JACK SYSTEMS

## Spar Mooring



Cluster of tension style chain jacks on a Spar

## Production Semi-Sub Mooring



These chain jacks pulled in the 151 mm mooring chain to 500 tonnes pre-tension

## Disconnectable FPSO Mooring



Factory testing of a compression style chain jack, capable of pulling in 375 tonnes

## Enhanced Semi-Sub Mooring



This compact chain jack has a holding capability of nearly twice that of adjacent mooring winches

## Experience

**Bardex Corporation** has a history of over 40 years supplying chain jacks for a number of diverse applications including:

- Spar Mooring
- Semi-submersible Mooring
- FPSO Mooring
- TLP Tendon Tensioning
- Shiplifts
- Portable Pier Systems
- Construction / Erection
- SCR (Steel Catenary Riser) Pull-In

## Chain Jack Systems

Bardex chain jacks can be arranged in tension style where the traveling crossarm cycles below the fixed chain stopper, or in compression style where the traveling crossarm cycles above the fixed chain stopper and either style can be mounted horizontally, vertically or at some angle in-between according to the application needs.

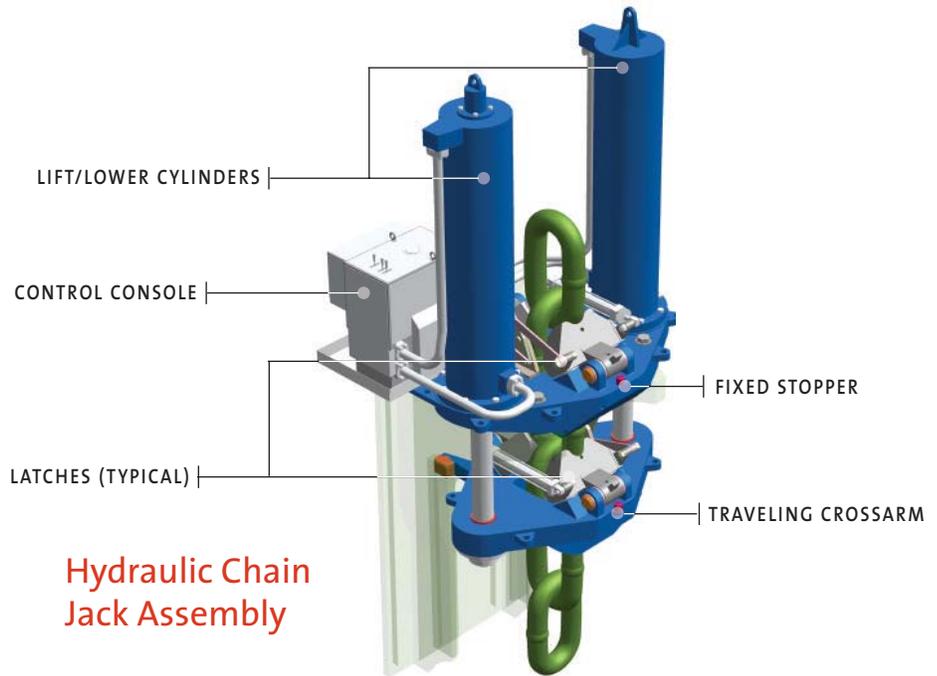
Bardex moveable chain jacks allow very easy demounting and movement of one chain jack between several fixed chain stoppers on passively moored vessels.

Fail-safe and redundant features provide for secure and dependable operation.

## The three-step tension style chain jack cycle:

- 1** The chain is held in the fixed chain stopper latches and as the traveling crossarm is extended, its latches ratchet open.
- 2** At its fullest extension, the traveling latches close and as the lift cylinders are energized, the traveling latches engage the chain and the traveling crossarm is raised further, the full chain tension will be transferred automatically from the fixed chain stopper latches to the traveling latches.
- 3** The fixed latches ratchet open as chain passes through until at the highest extent of the traveling crossarm, the fixed latches will close and as the traveling crossarm is lowered the chain will lower into the fixed latches and chain tension will automatically transfer from the traveling latches to the fixed latches.

## The Bardex Chain Jack Operating Sequence



Bardex Chain Jacks provide a compact and lightweight means of tensioning very large loads in mooring chains for permanently moored vessels such as Spars, Semi-submersibles, SALM / CALM buoys, and FPSOs. They are also installed to provide enhanced mooring capability to existing vessels including MODUs to cope with hurricane force winds.

### Safety features include:

- The chain is always held either by the fixed chain stopper latches or by the traveling crossarm latches.
- The latches are spring set to close and cannot be opened when under chain tension.
- All major hydraulic connections are hard-piped.
- Operator controls can be fully automated so that pull-in or pay-out can be achieved by one pushbutton operation.

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In 1963, Bardex Corporation (known then as Hydranautics) patented the linear chain puller naming it the “Chain Jack”. With that beginning, Bardex established a tradition of development and innovation in heavy load handling that today encompasses a wide variety of applications. Applications in which these products are operational include: offshore oil and gas, mooring/SCR pull in, module fabrication, heavy construction, nuclear plants, oceanographic and portable piers. Bardex systems have been approved by many classification societies including DNV, ABS, Lloyds, and Bureau Veritas.

## Hydraulic Chain 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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