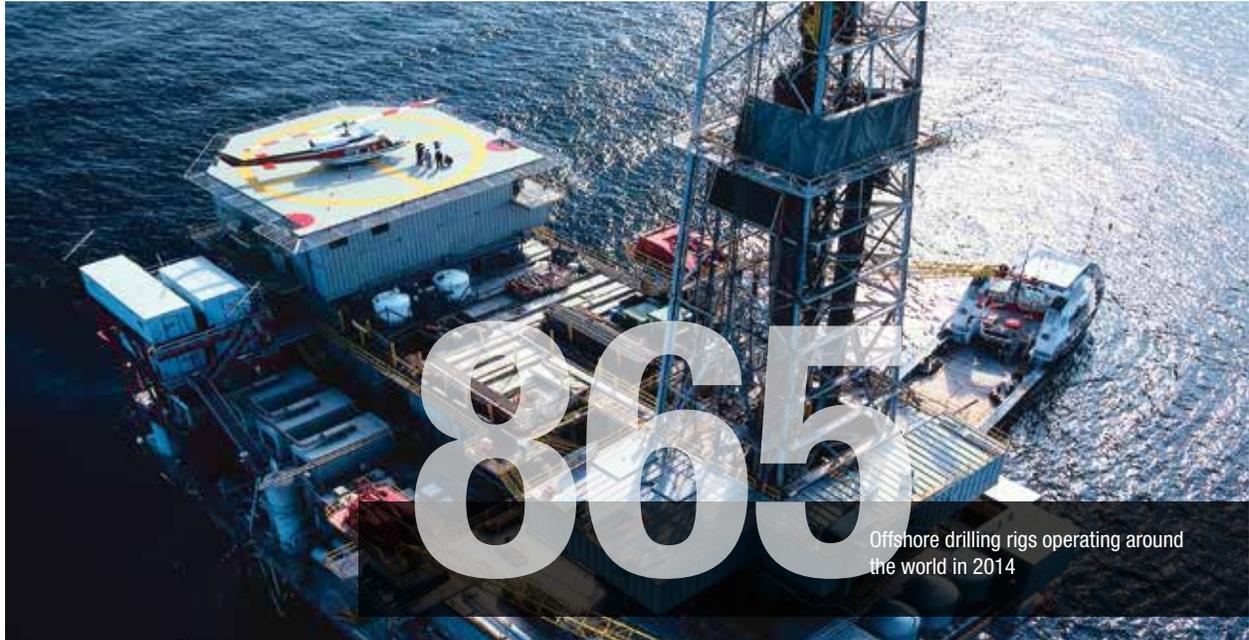


INNOVATION

SPOTLIGHT from the brands of Altra Industrial Motion Corp.



NEW COMPACT SVENDBORG BRAKING SYSTEM PROVIDES SUPERIOR PERFORMANCE IN TOUGH OIL & GAS APPLICATIONS

Both offshore and land-based oil and gas exploration has been steadily increasing over recent years to meet growing global energy requirements. Offshore drilling rig demand is expected to grow 10% per year while land-based rig demand is projected to increase 23% thru 2017.

In response to the need for more production, drilling rig and drilling ship OEMs are continually pressured to supply both existing and new platforms that provide higher performance, are more reliable, compact, easier to maintain and cost-effective... all while meeting increasingly stringent international regulatory requirements. Finding ways to reduce deck-mounted component size (and weight) is very important on offshore, as well as land-based rigs which are either delivered by truck and assembled on-site or are permanently truck-mounted.

SVENDBORG LISTENS AND RESPONDS

Svendborg Brakes is recognized as a global leader in designing intelligent braking solutions for a variety of industrial markets including oil and gas. Over the years, Svendborg has developed a comprehensive line of field-proven hydraulic caliper braking systems for use on drilling rig equipment including deck-mounted drawworks and winches.

Svendborg's extensive market application knowledge, together with their operational agility, allowed the engineering team to develop a new series of double-piston brakes in response to the industry's demand for drawworks and winch brakes that fit in the increasingly narrow, limited space available.



 **Svendborg**[®]
Brakes
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CRITICAL DRAWWORKS BRAKING REQUIREMENTS

A drawworks is the primary hoisting machinery on a rotary drilling rig. Its main function is to provide a means of raising and lowering the traveling blocks. A cable line winds on the drawworks drum and extends up to a block located at the top of the derrick, then down to a traveling block, allowing the drillstring to be moved up and down as the drum turns.

Modern drawworks are usually driven by an AC motor with primary braking performed by a VFD (Variable Frequency Drive). A disc brake system is used in case of emergency (failsafe) as well as for parking (holding).

Other drawworks are also available, including units driven by DC motors. In this case, a primary brake, either a disc brake or a modified clutch, serves as a parking brake when no motion is desired such as in an emergency (fail-safe). An auxiliary brake is connected to the drum and absorbs the energy released as heavy loads are lowered under normal/regular service conditions (active). A disc brake system is also used for precise stopping and control, when making and breaking out pipe.

LEVERAGING PROVEN TECHNOLOGIES

Svendborg engineers utilized their proven single-piston brake technology and incorporated it into a newly designed dual-position housing (yoke). The new yoke is made of steel instead of cast iron, which allows the brakes to be used where DNV OS-E101 DP, ABS-CDS or API-7K SR2 -20 requirements must be met.

The new double-piston caliper design provides the same clamping force as two single-piston calipers, but has a much smaller footprint, allowing the brakes to fit in narrower spaces. The brakes can also be used to retrofit/replace band brakes or other disc brakes currently installed in the field on DC driven drawworks.

The flexible double-piston disc calipers can be manufactured to perform as either direct acting fail-safe brakes or as active brakes with a clamping force range of 40,000 – 400,000N, depending on model.



Two compact, double-piston caliper disc brakes are shown installed on a drawworks drum.

The double-piston design also allows for operation in lower ambient temperatures (-40C compared to -20/-30C for standard calipers). Units have enhanced corrosion protection and versatile operating features while retaining minimal maintenance requirements.

While the new brakes were initially developed for the oil and gas market, they can also be used on mining conveyors and other cold-climate applications.

Many new double-piston brakes, installed on both ocean platforms and land-based rigs, are performing to expectations. Major drawworks and winch OEMs have reported positive results.

The new brakes are positioned well for future growth as market trends over the past 5-7 years have shown an increased use of caliper brakes, especially on 1500HP and larger drawworks.