



Off-Highway Drive and Motion Technologies **Deck Cranes**

Brevini® motion systems
from Dana for deck crane
applications



Dana – Your Single Source for **Motion Systems** to Support Deck Cranes

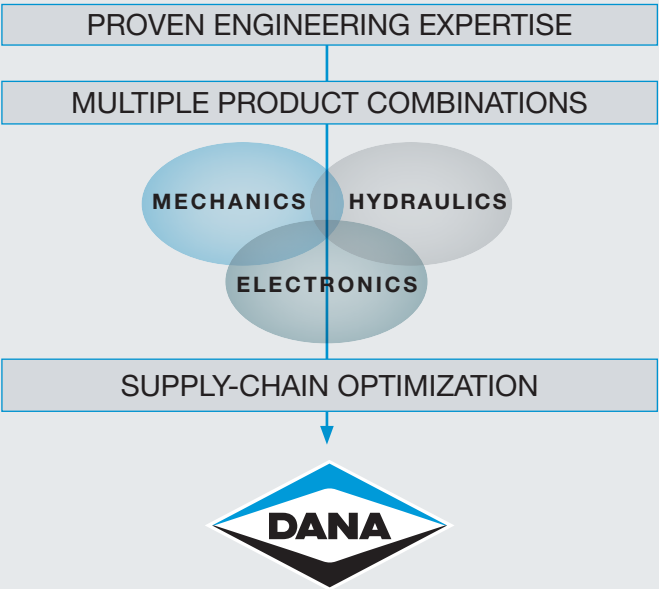
With a rapidly growing need for “electrified technologies” to help original-equipment manufacturers meet standards for reduced pollution and consumption, the deck crane market is also facing end-user demands for low cost of ownership and a reduced environmental impact.

To address these market trends, Dana delivers a range of advanced motion products for deck cranes. We design and manufacture fully integrated motion products for all types of deck cranes, along with other types of cranes used in the marine, offshore, and harbour crane markets.

Dana designs and manufactures fully integrated motion systems for a complete range of deck cranes with many variants. Dana’s flexibility and engineering expertise deliver the right solution for any needs.

A Trusted Partner

Dana’s engineering capabilities, broad product range, and focus on collaboration with customers allow us to deliver optimal solutions with the performance required to support high levels of efficiency. As a single supplier, with a unique portfolio Brevini® motion systems, we can also help to optimize supply chains.



Market-Driven **Innovations**

We deliver innovative technologies to meet worldwide customer demands. By anticipating market trends, Dana uses industry expertise to deliver product solutions to help customers achieve their goals.



Customized Technologies



Full-System Solutions



Low Cost of Ownership



Electrification



Global Support

Full-System Solutions for Deck Cranes

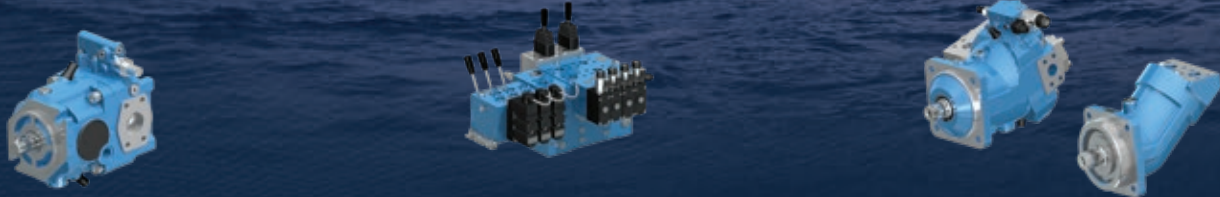
Deck cranes – cranes installed on the deck of a ship – come in a wide variety of types and sizes and are often classified by the specific application for which they are designed. All deck cranes share similar basic functions – lifting, lowering, and positioning a load from one site to another. However, functionality varies greatly depending on where the crane is being used. Deck cranes designed to move loads when a ship is docked in the quay handle much smaller loads than deck cranes for offshore

applications, which need to manage several hundred tons, often while ships are floating in a stormy sea. Customizable design options include hydraulic and electric drivelines; telescopic, knuckle, or lattice booms; a range of control system features to improve accuracy; and environmental features to optimize performance based on worksite conditions. Dana works with customers to ensure that all local standards are met, as well as regulations set by the International Association of Classification Societies (IACS).

Main Hoist System



Active Heave Compensation Main Hoist Drive



Brevini® Axial Piston Pumps

Displacement Up to 226cc
Medium and high pressure
Fixed and variable displacement available
Open or closed loop circuit
Atex certifications
Environmentally Acceptable Lubricants (EAL Fluid)
Suitable for working in harsh and aggressive environments

Brevini® Proportional Directional Valves

Oil Flow Up to 1000lt/min
High modularity
Atex certification
Remote control, electronic operation
Smooth control to improve operation functionality and accuracy

Brevini® Axial Piston Motors

Main hoist drive motors
Marine painting cycle
Fixed and variable displacement up to 216 CC/ rev.
Seven or nine pistons options technologies
Wide control valves range
Third parties marine certification available
Atex certifications available
Environmentally Acceptable Lubricants (EAL Fluid)
Suitable for working in harsh and aggressive environments



Brevini® Industrial Planetary Gearboxes – S Series

Main winch drives
Ratio range up to 5.000:1
Modular design
Input flange for hydraulic and electric prime mover
Compact and light solutions for a perfect fit on the machine frames
Marine painting cycle
Third parties marine certification available

Brevini® Winch Drives

Winch drive for auxiliary hoist system
Ratio range up to 6.000:1
Max torque up to 850 kNm
Third parties marine certification available
Inline and right angle configuration version available
Electric motor connection available
Atex certifications on request
Integrated hydraulic failsafe negative brake and electromagnetic brake available
Safety devices available as back stop, torque limiter and sensors



Brevini® Evolution™ Series Winches

Winches for auxiliary hoist system
Line pull up to 30 Tons
Third parties marine certification available
Wide range of safety controls
Equipped with Brevini® high speed axial piston motor
Lifting of personnel available



Brevini® Planetary Gearboxes – Slewing Drives

Torque range up to 370 kNm
Modular design, inline or right angle configuration
Wide option of output support configuration (low lunge, long a short support with eccentricity)
Failsafe negative brakes
Input flange for hydraulic and electric prime mover
Compact and light solutions for a perfect fit on the machine frames
Output pinion for any customer needs
Product marine / offshore class certification available
Special solutions for Low Climate and ATEX

Dana offers customized solutions to meet a range of customer needs, including modular designs and add-on accessories.

Brevini® Portfolio expanded with two new products line covers every application in Marine Sector

Through its platform of proven technologies, Dana offers an expanded portfolio of solutions for marine, offshore and port equipment applications to serve the specific needs of these sectors.

A new range of Brevini® Winches and Large Winch Drives offer the reliability and support critical for these applications. Designed for personnel lifting and suitable for third-party certifications, the winch series is suitable for output line pull up to 30 tonnes.

Electrical motor connections can be available on request. The large winch drives cover output torque up to 450 kNM, offering a sizeable solution based on a modular and compact concept design optimized for electric motor connections.

All winches and winch drives are available with Brevini® Fluid-Power hydraulic motors and related control valves that can be customized to satisfy any customer requirement.

Brevini® Heavy-Duty Winch Drives

Multi-disc parking brake improves safety

Lightweight design features a wide range of ratios available with hydraulic or electric motors, ensuring the best performance and highest level of efficiency for each unique application

Hub and spindle made of high-strength material to meet customer requirements

Brevini® hydraulic axial piston motors and load holding valves available

High radial load bearings deliver reliable lifting performance for heavy loads

Special sealing system designed for severe environments



Brevini® Evolution™ Series Winches

New Brevini® hydraulic axial motor featuring variable displacement with nine pistons; ideal balance of smooth control, at low speeds and high performance

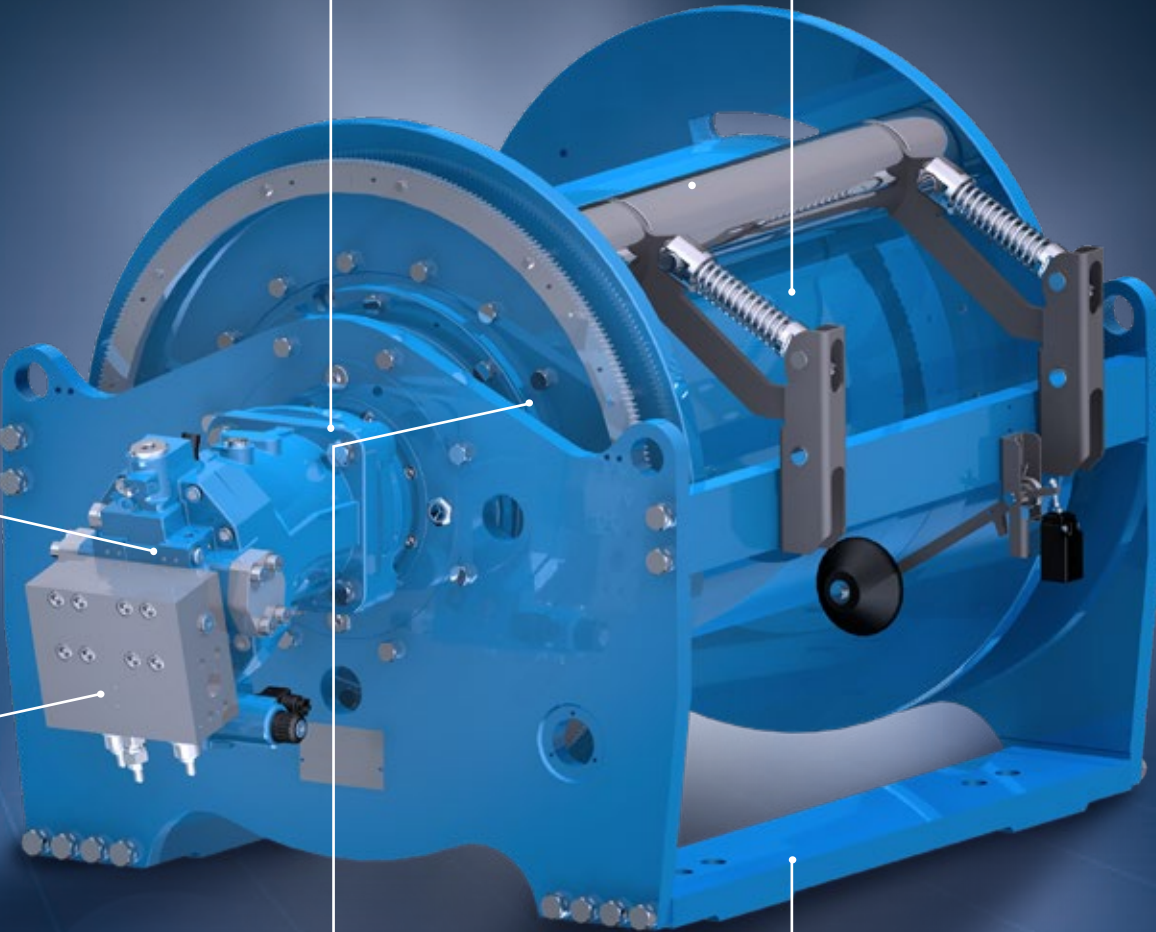
Specific multidisc static brake, designed specifically for winch applications

Robust steel drum, available in grooved or smooth options

Brevini hydraulic valve ensures safe operation with enhanced control during load lowering

High-performance gears allow for low noise, long product life

Robust steel frame, suitable for low-temperature applications





Technologies Customized to **Every Part of the Globe**

With a global presence in 33 countries, Dana Incorporated boasts more than 100 engineering, manufacturing, and distribution facilities. Our worldwide network of local service centers provides assurance that each customer will benefit from the local proximity and responsiveness that they need.

About Dana Incorporated

Dana is an integral partner for virtually every major vehicle and engine manufacturer worldwide. We are a leading supplier of drivetrain, sealing, and thermal technologies to the global automotive, commercial-vehicle, and off-highway markets. Founded in 1904, we employ thousands of people across six continents.



About Dana Off-Highway Drive and Motion Technologies

Dana delivers fully optimized Spicer® drivetrain systems and individual product solutions to customers in construction, agriculture, material-handling, underground mining, and forestry markets, plus Brevini® motion systems for machine working functions.

Learn more about Dana's drivetrain and motion systems at
dana.com/offhighway.

dana.com/oh/contact



SPICER® **BREVINI®**

Application Policy

Capacity ratings, features, and specifications vary depending upon the model and type of service. Application approvals must be obtained from Dana; contact your representative for application approval. We reserve the right to change or modify our product specifications, configurations, or dimensions at any time without notice.

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