

## Drive and Motion Systems for Waste Management and Renewable Energy



## **Off-Highway Segments**

### Established in 1904. Employing 42,000 people in 31 countries across six continents. Shipping to 14,000 customers, leveraging a global network of technology centers across 9 countries.

### **Our Vision Powering Innovation** To Move Our World

**Our Mission** 

- This mission is embodied in our company theme: People Finding A Better Way. Driving stakeholder value by:
- powering vehicles and machines around the world
- shaping sustainable progress
- through invention and execution
- making the amazing happen wherever people live, work, and play.

Light Vehicle **Drive Systems** 

### **Our Values**

- Value Others
- Inspire Innovation
- Grow Responsibly

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Win Together



Industrial

### **Bulk Materials**

Dana has an extensive range of gearboxes with torque ratings of up to 3 million Nm. Our qualified, experienced engineers provide optimum solutions for heavy-duty applications, and our service team delivers support for the entire life cycle after delivery.

### Heavy Industry: Steel, Sugar, and Cement

Brevini<sup>™</sup> gearboxes have been used in heavy-duty operations from mines to steel production for more than 50 years. Our portfolio of advanced technologies has been engineered to support increased productivity and reliability, improved operator safety, and reduced total cost of ownership.

### **Onshore and Offshore Marine**

Brevini<sup>™</sup> planetary gearboxes have supported the exacting specifications and certifications of winches and cranes in the marine and offshore market for many years. We also offer a wide range of fluid power solutions that deliver safe and reliable solutions for OEM applications.

### **Corporate Business Units**

Dana serves the global light vehicle, medium- and heavy-duty vehicle, and off-highway markets through four business units: Light Vehicle Driveline Technologies, Commercial Vehicle Driveline Technologies, Off-Highway Drive and Motion Technologies, and Power Technologies, which is the center of excellence for sealing and thermal management technologies that span all customers in our on-highway and off-highway markets.



Commercial Vehicle Drive and Motion Systems





### solutions to meet customer requirements, while our service division has extensive

### **Industrial and Stationary Equipment**

Our range of gearboxes and hydraulic products offers reliable solutions for all equipment within the industrial and stationary sectors. Our products enable high productivity and low maintenance costs backed by our aftermarket support and service.

### **Plastic and Rubber**

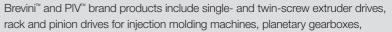
rack and pinion drives for injection molding machines, planetary gearboxes, and helical and bevel helical gearboxes.





### Waste Management and Renewable Energy

Brevini<sup>™</sup> gearboxes for waste management and and renewable energy are used in numerous applications worldwide. We provide sustainable and reliable experience in optimizing the performance of gearboxes over the long term.











# Full-System Solutions for **Shredders and Conveyors**

Solutions by Dana Brevini<sup>™</sup> can cover a wide range of waste and recycling shredders along with solutions for conveyor drives to provide the complete offering for recycling plants. Dana's planetary gearboxes and helical / bevel helical gearboxes offers best-in class performance in terms of high torque and high peak load capabilities as well as compactness to meet most of our customer needs.

Dana Brevini Planetary and Bevel-Helical gearboxes can be used to drive a wide range of shredder machines. Our innovative solutions provide high mechanical and thermal performance with the capability to withstand high peak loads during operation.



### **Planetary Solution**

- Modular concept
- Extensive ratio range
- Strong output support available in female and male configurations
- GJS400 cast iron housing as standard
- Customized solutions available on demand
- Input connection for most types of IEC and NEMA electric motors as well as hydraulic motors



### Helical and Bevel – Helical Gearboxes

- Extensive ratio range
- Strong output support available in female and male configurations
- GJS400 cast iron housing as standard
- Customized solutions available on demand
- Input connection for most types of IEC and NEMA electric motors as well as hydraulic motors



### Plano Helical and Bevel – Helical Gearboxes

- Plano Helical: Light, compact solution
- GJS400 cast iron housing as standard
- Extensive ratio range
- Increased thermal capacity
- High efficiency
- Customized solutions available on demand
- Input connection for most types of IEC and NEMA electric motors

# Full-System Solutions for **Biogas Plants**

Biogas is a mixture of gasses produced from raw materials such as agricultural waste, manure, municipal waste, and other plant and food waste materials. Biogas is a renewable energy source produced by anaerobic digestion inside an anaerobic digester (Biogas Plant). The biogas plants are fed with waste material or energy crops utilising conveyors where the fermentation process begins utilising various processes. Dana Brevini<sup>™</sup>, offers a wide range of product including planetary, bevel helical and plano helical gearboxes suitable for conveying and mixing within biomass plants. Dana Brevini offers gearboxes with standard features to ensure reliability and efficient operation required in the process of creating clean renewable energy.



### **Plano Helical and Bevel**

- Helical Gearboxes
- Plano Helical: Light, compact solution
- GJS400 cast iron housing as standard
- Extensive ratio range
- Increased thermal capacity
- High efficiency
- Customized solutions available on demand
- Input connection for most types of IEC and NEMA electric motors
- Explosion proof. ATEX certification available



### **Planetary Solution**

- Modular concept
- Extensive ratio range
- GJS400 cast iron housing as standard
- In-Line and Right-Angle configurations available
- High Efficiency
- Input connection for most types of IEC and NEMA electric motors
- Explosion proof. ATEX certification available



### **Slewing Drives**

- Torque range up to 370 kNm
- Modular design, inline or right angle configuration
- Range of output support configurations (low angle, long and short support with eccentricity)
- Failsafe negative brakes
- Input flange for hydraulic and electric prime motor
- Compact, light solutions for a perfect fit on machine frames
- Flexible output configuration to meet customer needs



## Full-System Solutions for Thickener and Clarifier Drives

Industrialization and environmental changes have seen urbanisation rates increase steadily over the years. Consequently, wastewater treatment is becoming a crucial aspect for businesses and local municipalities looking to recycled and reclaim water. Substituting potable water with recycled water for irrigation, agriculture and industrial uses relieves pressure on distribution networks limiting extraction of freshwater from natural sources. Dana Brevini<sup>™</sup> extensive product portfolio of planetary and bevel helical gearboxes serve customers with high torque and efficient solutions for any applications within the water treatment plant. Dana Brevini planetary gearboxes offer optimised solutions for thickener & clarifier drives suitable for vertical mounting position equipped with a wide ratio range for slow running applications. Equipped with standard accessories, Dana Brevini gearboxes can effectively and efficiently operate all applications ensuring reliability in demanding applications.



## Planetary Gearboxes for Single Drive Solution

- Modular concept
- Extensive ratio range
- Strong output support available in female and male configurations
- GJS400 cast iron housing as standard
- System to prevent blade overload and torque limiter
- High Efficiency
- Input connection for most types of IEC and NEMA electric motors



### Slewing Drives for Multiple Drive Solution

- Torque range up to 370 kNm
- Modular design, inline or right angle configuration
- Range of output support configurations (low angle, long and short support with eccentricity)
- Failsafe negative brakes
- Input flange for hydraulic and electric prime motor
- Compact, light solutions for a perfect fit on machine frames
- Flexible output pinion to meet customer needs

# Full-System Solutions for Water Pumps

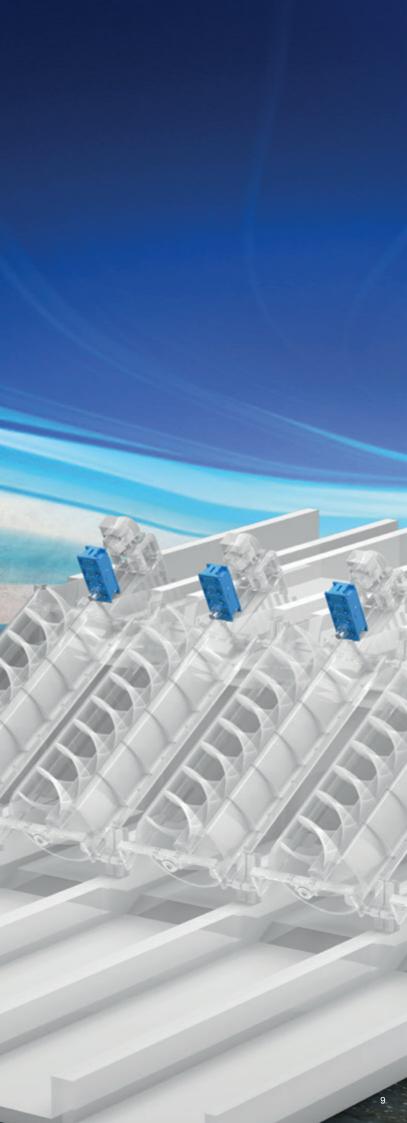
Archimedes Screw Pumps are used for pumping fluids from low-level areas to higher ground. Typically, applications include sewage plants, flood defence, drainage and irrigation systems. The Brevini EvoMax<sup>™</sup> offers improved gearing profiles meaning lower noise, a strict requirement particularly near urban areas. The Brevini EvoMax also offers higher efficiency making it an excellent option when using the Archimedes Pump as a generator by reversing the flow.

In addition, Dana Brevini<sup>™</sup> is able to provide standard and customized gearbox solutions also for the following applications within the Water Treatment sector: Vertical and Paddle Aerators, Anaerobic Digesters, Band Screeners, Water Gates, Trash Rakes, and Debris Filters.



### Helical and Bevel – Helical Gearboxes

- Wide range of sizes
- Ease of maintenance
- Increased reliability
- High degree of modularity
- Optimized oil levels
- Optimized oil consumption
- Housings available in grey or nodular cast iron GJS400 or welded steel as standard
- Increased efficiency lower energy consumption
- Lower risk of environmental impact



## Market-Driven Innovation

## **Off-Highway Performance Expectations**

## Safety

Productivity

Maneuverability

Durability

Serviceability

### Total Cost of Ownership

### About Dana Incorporated

Dana is a leader in the design and manufacture of highly efficient propulsion and energy-management solutions that power vehicles and machines in all mobility markets across the globe.

The company is shaping sustainable progress through its conventional and clean-energy solutions that support nearly every vehicle manufacturer with drive and motion systems; electrodynamic technologies, including software and controls and thermal, sealing, and digital solutions.

### About Dana Off-Highway Drive and Motion Systems

Dana delivers fully optimized solutions to customers in the construction, agriculture, material handling, mining, forestry, and industrial markets.



### Dana-industrial.com

### **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.

