

INDUSTRY

Food Processing

Proven solutions for washdown applications



Food processing is vital to the global economy

Food manufacturers are facing ever-increasing challenges such as labor shortages, food safety regulations, technological innovations, increasing costs, and competitive pressures. With the increased need to improve efficiencies and prioritize safety, food processing plants are looking for suppliers that can partner with them to meet these needs.

No matter the process—mixing, blending, cooking, baking, bottling, or conveying—food manufacturers rely on mechanical power transmission products to perform reliably around the clock. The products used in these processes are exposed to a wide range of tough operating conditions, including harsh, high-pressure sanitary washdowns.



Your trusted partner

Dodge® Industrial offers a comprehensive line of solutions for the food processing industry that are engineered with industry-leading sealing systems and materials to withstand rigorous washdown procedures for long-lasting performance and cleaner, safer operations with less maintenance.

The average cost per recall is over \$10 million*

As a public health issue and one of the biggest threats to profitability, food recalls can have a major impact on sales and brand reputation. On average, a food company pays \$10 million in direct costs for a recall, with repercussions far beyond monetary. Food recalls have increased significantly in the past few years, resulting in heightened regulations and significant economic impact for a food manufacturing company. Now more than ever, it is imperative that food processes be as clean, safe, and efficient as possible.

Aggressive cleaning and sanitation practices aren't just part of the process, but essential to smooth operations and profitability

These processes are extremely tough on equipment. With decades of experience in the food and beverage industry, Dodge has a unique understanding of the issues that impact your productivity and have designed a full range of food-grade products that meet Food and Drug Administration (FDA), United States Department of Agriculture (USDA), European Communities (EC), and European Union (EU) standards for incidental food contact regulations, ensuring they will operate reliably and with less maintenance. To ensure uptime, don't let bearings and gearing be the weak link in your production chain—take a proactive approach with Dodge solutions.

*SOURCE: food-safety.com



The right equipment for the operating environment

Dodge understands that a food producer's top priority is finding the safest, most cost-effective design that provides the best longevity for their equipment and processes. However, the best solution is not as simple as choosing the appropriate horsepower, speed, or torque and specifying based on price point. The answer goes beyond the initial purchase price to an evaluation of specific needs in conjunction with the total cost of ownership.

Selecting and installing the right gear reducer and bearing combination based on the operating environment is paramount to ensuring your process runs without interruption and keeps your operation clean and safe.

Following the National Sanitation Foundation (NSF) guidelines, food equipment standards are designed in a manner that classifies different surfaces or areas of equipment into defined zones of exposure.



Food zone

Direct contact with food products is normal and expected. Components must be able to withstand aggressive, high pressure, high temperature cleaning methods.



Splash zone

Direct contact with food products is not expected with the potential that liquids used in processing or cleaning may come into contact with the equipment. Equipment must be able to withstand regular or frequent washdowns.



Dry zone

Equipment is typically located outside of a normal washdown area where direct contact with food products during normal operation is not expected.




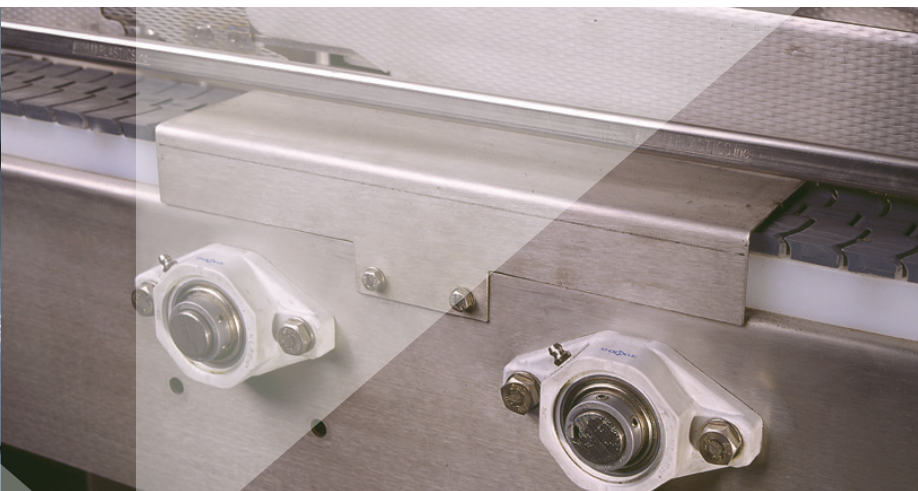
The best solutions the industry has to offer

Since 1878, Dodge mechanical power transmission products have been synonymous with the best the industry has to offer. These products have handled the toughest applications, providing the lowest total cost of ownership to both food equipment manufacturers and end-users.

Dodge products come in a variety of designs to fit the many needs in your facility. From FoodSafe™ to Ultra Klean® to E-Z Klean®, the extensive Dodge offering allows you to select the right product for your specific application. Regardless of the environment, Dodge has a solution to keep your mechanical power transmission components in service longer, with fewer failures, no matter how harsh the conditions.



	Food zone	Splash zone	Dry zone
Mounted bearings	 FoodSafe	 Ultra Klean/E-Z Klean	 Standard
Gearing	 FoodSafe	 E-Z Klean	 Standard



FoodSafe mounted bearing and gearing solutions

Food zone



Our FoodSafe products are engineered to meet or exceed stringent food safety guidelines and recommendations. These sanitary design principles ensure that our products provide the best solution for all harsh washdown conditions.

A critical factor that influences performance and product life is the quality of the food contact surface. All FoodSafe products are constructed of stainless steel that can withstand caustic, high pressure, and high temperature sanitary washdown conditions.

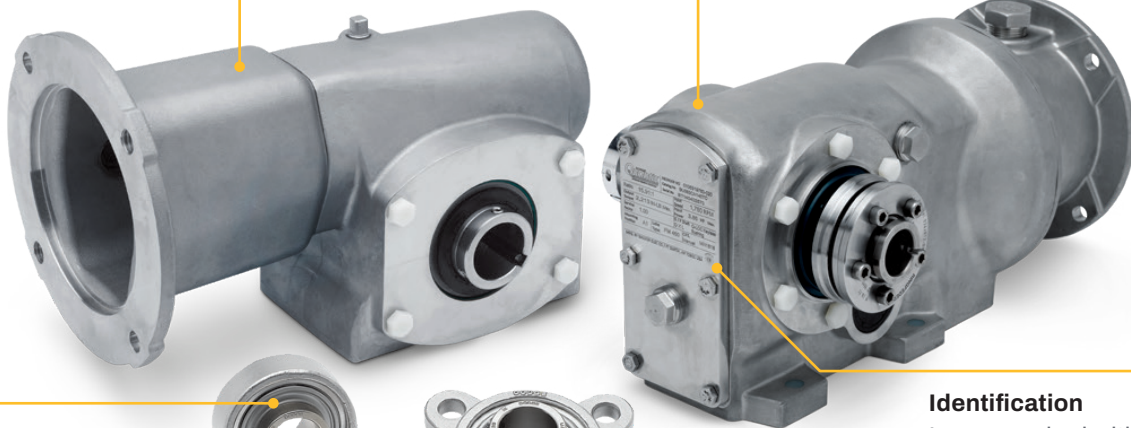
Housing

Smooth, solid housings eliminate harbor points for bacterial growth, ensuring a safer, cleaner environment



Stainless-steel construction

Constructed of stainless steel for superior corrosion-resistance, providing maximum performance to withstand clean-in-place procedures



Maintenance-free design

Lubricated for life and sealed to prevent contamination from water ingress and debris



Durable seals

Engineered with the most durable seals on the market to prevent water ingress and protect from external contamination, ensuring cleaner operations and longer product life

Identification

Laser-marked with product identification, eliminating harbor points to reduce risk of recall and ensuring legibility throughout the product's life

H1 food-grade lubricant

Lubricated for life with H1 food-grade lubricant to comply with all FDA requirements

FoodSafe options

Mounted ball bearings

- Set screw locking mechanism in bore sizes 1/2 in—2 in (20 mm—50 mm)
- Standard and stand-off housing with pillow block, flange, tapped base, and take-up housing styles

Tigear®

- Available in sizes 13—35 with quill-style or three-piece coupled inputs
- Solid and hollow output configurations

Quantis®

- Offered in a right-angle bevel (RHB) configuration
- Available in sizes 38 and 48 with solid-shaft, straight-hollow bore, and Q-Loc keyless bushed shaft-mount outputs



1-year guarantee against failure due to water ingress

We are confident in our testing and simulations of real-life, clean-in-place procedures and have backed FoodSafe products with an unprecedented 1-year guarantee against failures due to water ingress, going beyond traditional warranties that only cover materials and workmanship.

Tested at seven times the recommended water pressure

As the recommended standard for washdown environments, an IP69 rating indicates products that are protected against high-temperature and high-pressure spray at close proximity. Industry guidelines recommend limiting cleaning pressures to 200 psi—our testing was conducted at seven times this pressure to demonstrate the robustness of our sealing system.

IP69 TEST PROCEDURES

- 176 °F (80 °C)
- 1160—1450 psi (80—100 bars)
- Distance: 4—6 in (10—15 cm)
- Flow rate: 4 gpm (15 lpm)
- Rotational speed: 5 rpm
- Four spray positions; 0, 30, 60, 90 degrees
- 30 seconds per position



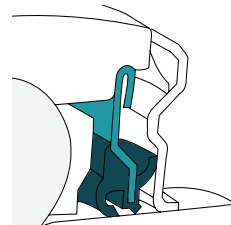
Setting the standard for mounted bearings in washdown environments



Proprietary KleenTec coating for unmatched insert corrosion resistance



Patented Maxlife cage to prevent grease washout



Hydro Armor sealing system for superior contamination protection

Ultra Kleen mounted bearing solutions

Splash zone



Our high-performance Ultra Kleen solutions are engineered for reliable lubrication protection to extend product life in challenging wet and corrosive environments, taking your operation's cleanability to the next level. Built with innovative features, the range of mounted ball bearing solutions is an advantageous addition to your food processing operations to improve efficiency and minimize risk.

Set screw locking mechanism

Utilizes a 65-degree set screw angle to maximize holding power while minimizing stress on the inner ring for long-lasting performance

Food-grade lubricant

Filled 100 percent with H1 food-grade grease, suitable for incidental food contact and meeting Kosher, Pareve, and Halal requirements

Housing options

Anti-microbial polymer and smooth, stainless steel housing options are designed to minimize bacteria harbor points and mitigate corrosion from harsh cleaning agents

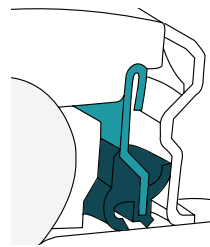
Stainless-steel insert

Provides a high load-carrying capacity and extended product life in environments where coated inserts fail



Patented Maxlife cage

Creates a grease compartment around each ball element for constant grease contact to prevent wear, friction that causes heat, and washout



Hydro Armor sealing system

Protects the internal rotating elements from water ingress and is mechanically retained to prevent seal blowout

Ultra Kleen options

Mounted ball bearings

- Set screw locking mechanism in bore sizes 3/4 in—2 in (20 mm—50 mm)
- Anti-microbial polymer and stainless-steel housing materials with pillow block, flange, tapped base, and take-up housing styles



E-Z Kleen mounted bearing and gearing solutions

Splash zone



The original Dodge washdown solution, E-Z Kleen mounted bearings and gearing products are optimized to withstand environments with required cleaning and sanitation practices. Featuring corrosion-resistant designs, the wide range of products provides robust protection against contamination and worry-free operation in a variety of food handling and packaging applications.

Housing options

Corrosion-resistant housings and components for protection from contamination and rigorous washdown procedures



Food-grade lubricant

Factory-filled with H1 food-grade lubricant to comply with all FDA requirements

Durable seals

Robust sealing systems to prevent grease washout for increased reliability

E-Z Kleen options

Mounted ball bearings

- Set screw, D-Lok, and Grip Tight locking mechanism options in bore sizes 3/4 in—2 in (20 mm—50 mm)
- Anti-microbial polymer and stainless-steel housing materials with pillow block, flange, tapped base, and take-up housing styles
- Plated carbon-steel inner and outer rings for corrosion-resistance
- Hydro Armor sealing system for superior contamination protection
- Patented Maxlife cage to prevent grease washout

Quantis

- Inline helical (ILH), right-angle bevel (RHB), and motorized shaft mount (MSM) configurations
- NEMA-dimensioned clamp collar or three-piece coupled options

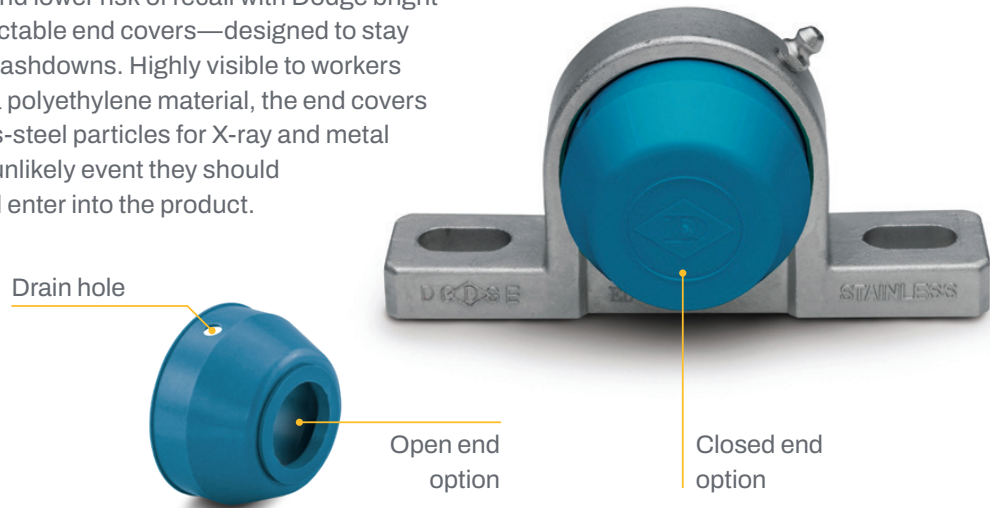
Tigear-2

- Quill style or three-piece coupled NEMA C-face inputs
- Solid or hollow output configurations

The final touch to a complete solution

Metal-detectable end covers for rotating shafts

Improve safety and lower risk of recall with Dodge bright blue, metal-detectable end covers—designed to stay in place during washdowns. Highly visible to workers and made from a polyethylene material, the end covers contain stainless-steel particles for X-ray and metal detection in the unlikely event they should be damaged and enter into the product.



Technology to help you work smarter, not harder

The Dodge portfolio of Industrial Internet of Things (IIoT) solutions allow you to easily monitor the overall health of your power transmission equipment and gain powerful insights—letting you know when maintenance is needed before it's too late.

Take the guesswork out of work by pairing OPTIFY™ with Dodge sensor technology installed on sensor-ready products to reduce unplanned downtime, improve reliability, operate safely, and make better-informed decisions in real-time.



OPTIFY™

Get started at
dodgeoptify.com







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