



THE **MOTOR** LINE  
THAT **STANDS UP**  
TO **WASHDOWN.**

# WASHGUARD® INDUSTRIAL DUTY ELECTRIC MOTORS

OCTOBER 2022 | NORTH AMERICA, LATIN AMERICA



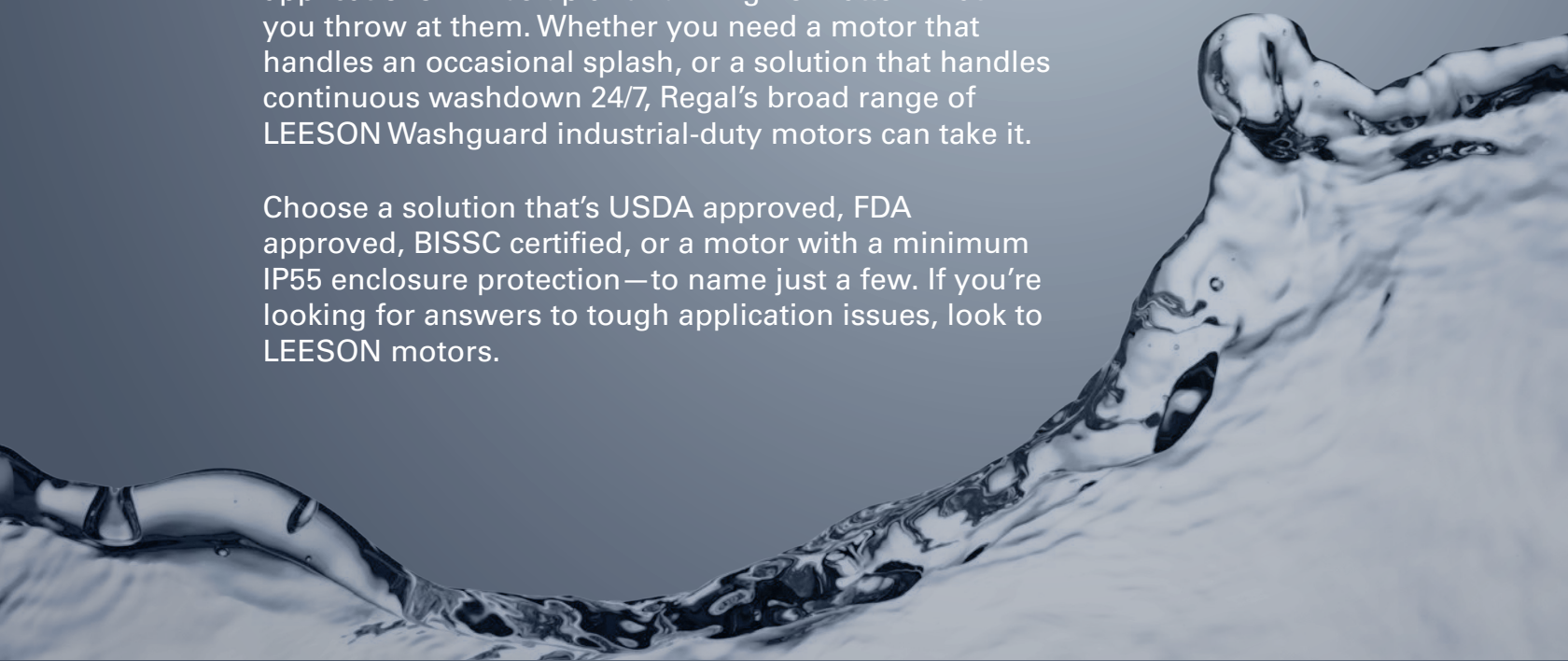
 **RegalRexnord™**

# NOTHING SHEDS WATER LIKE A DUCK. LEESON® WASHGUARD® INDUSTRIAL-DUTY MOTORS.



LEESON® Washguard® motors deliver something most motors can't—the confidence to know your applications will be up and running no matter what you throw at them. Whether you need a motor that handles an occasional splash, or a solution that handles continuous washdown 24/7, Regal's broad range of LEESON Washguard industrial-duty motors can take it.

Choose a solution that's USDA approved, FDA approved, BISSC certified, or a motor with a minimum IP55 enclosure protection—to name just a few. If you're looking for answers to tough application issues, look to LEESON motors.



# THE MOTORS THAT STAND UP TO WASHDOWN.

## LEESON® WASHGUARD® MOTORS FEATURES AT A GLANCE



FEATURE	WHITE DUCK	WASHGUARD II	SST DUCK	STAINLESS DUCK	EXTREME DUCK® ULTRA
<b>SEALING ADVANTAGES</b>					
Complete motor encapsulation					■
Interior corrosion protection	■	■	■	■	■
Motor breather plugs/drain plugs	■	■	■	■	Not needed for total encapsulation
Shaft seals on both ends of TEFC motors	■	■	■	■	■
Two-piece shaft seal					■
Viton®* seals between endbells and frame				■	■
O-ring sealed openings				■	■
Potted lead entrance					■
<b>INSTALLATION AND MAINTENANCE</b>					
Color-coded leads					■
Non-wicking lead wires					■
Sealed bearings	■	■	■	■	■
Internally locked shaft-end bearing	■	■	■	■	■
Screw-on conduit box cover				■ ①	■
360° rotatable conduit box					■
Q-Car™ rotor cartridge change-out				■	■
<b>CERTIFICATIONS</b>					
Nameplate permanently etched in frame			■	■	■
60Hz and 50Hz data on nameplate	■	■	■	■	■
CE mark on nameplate	■	■	■	■	■
Standard motors built with inverter rated insulation system and marked on nameplate (1 HP and higher)	■	■	■	■	■
IP Ratings	IP55	IP55	IP55	IP56	IP69*
UL, CSA listed	■	■	■	■	■
BISCC approved		■			■
<b>SPECIAL CONSIDERATIONS</b>					
Pump motor designs	■			■	
Brakemotor designs	■			■	
DC motors available	■			■	
Metric designs available				■	■
Local inventory support	■	■	■	■	■

\* IP69k tested per DIN 40050-9

① 56/143/145T Frame Ratings ② Premium Efficient Motors



# WHITE DUCK MOTORS

HIGH-GLOSS EPOXY.  
FDA-APPROVED.



Suited for an occasional washdown, White Duck motor is the LEESON® Washguard® motor series that started it all. Choose AC and DC ratings, 1/3–15 HP.

#### Ratings:

- IP55 enclosure protection
- USDA-approved white epoxy finish

The White Duck motor series is geared for applications exposed to an occasional washdown. Coated in a high-gloss, high-durability, FDA-approved white epoxy finish, White Duck Washguard® motors find a perfect fit in conveying, bottling, food packaging, pumping and fan applications—wherever batch or process requirements demand reliable performance.

#### BENEFITS:

- Durable white epoxy finish for superior protection
- Stainless steel shaft, hardware, conduit box, cover and nameplate
- Buna-N gaskets and Viton® shaft seals on both ends of TEFC designs
- Drains for all mounting orientations enable flexible installation
- NEMA Premium®—1 HP and higher - 3 Phase
- Moisture-resistant interior coating inhibits corrosion
- IRIS® inverter rated insulation system—1 HP and higher
- Single-phase motors feature an electronic solid-state switch for worry-free starting in high-moisture installations





### JET PUMP & JM PUMP MOTORS

- 3/4–3 HP designs
- 1–15 HP JM pump designs
- C face, with and without base
- EPACT and premium efficient



### BRAKEMOTOR

- 1/2–2 HP designs
- 208–230/460, 3-phase
- Stearns® brakes
- Optional washdown brake kits



### NEMA® THREE-PHASE MOTORS

- 1/4–15 HP designs
- 230/460 and 575 volts
- Rigid base and C face designs
- EPACT and premium efficient inverter rated



### WASHGUARD® COUPLER BRAKES - WHITE EPOXY

- Single phase 115/230 volt coils
- Three phase 208-230/460 and 575 volt coils

**NEW!**



### EXPLOSION PROOF WASHGUARD THREE-PHASE MOTORS

- 1/2 - 2 HP designs
- 230/460 volts
- C face with base
- Premium efficiency
- Thermostats
- Division 1, Division II, Class 1, Groups C & D
- Class II, Groups F & G - with conduit box



### WASHGUARD® BRAKEKITS

- Three phase 208-230/460 volts
- Single phase 230 volts
- 1 HP, 3 Ft-lbs
- 2 HP, 6 Ft-lbs
- 3 HP, 10 Ft-lbs



### NEMA SINGLE-PHASE MOTORS

- 1/3–2 HP designs
- C-Face, with and without base
- Solid-state starting switch



### DC GEARMOTORS

- P300, PE350 and right-angle series
- 90 and 12 volt designs
- Stainless steel exterior hardware
- Precision-machined gears



### NEMA DC MOTOR

- 1-1/2 HP designs
- 90 and 180 volts
- Removable base
- IEC B5 flange ratings available
- 1/8–1/4 HP 12V designs

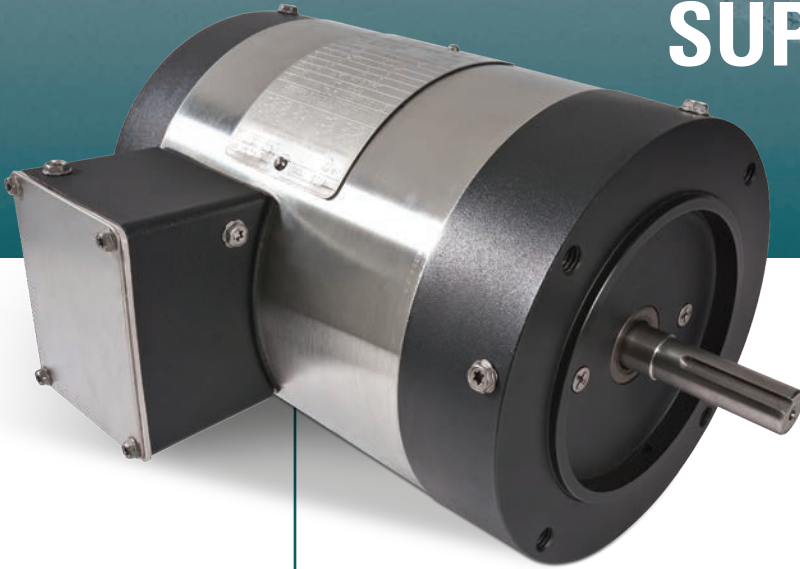


### AC GEARMOTORS

- P240 and right-angle series
- 115/230, 1-phase designs
- 230, 3-phase designs
- 304 Series stainless output shafts
- Needle bearings for high-output torque

# WASHGUARD® II SUPER DUCK® MOTOR

PAINT-FREE FINISH.  
A FOOD-PROCESSING FAVORITE.



The Super Duck motor series is an ideal solution for conveying applications in bakeries and food-processing plants with its paint-free finish. AC ratings from 1/2–2 HP.

#### Ratings:

- IP55 enclosure protection
- BISSC certified for the baking industry, authorization no. 769

Tested and approved to handle 2,500 hours of diluted salt spray, the Super Duck® Washguard® II motor series—with its paint-free design—is well suited for the demanding environments of bakeries and food processing facilities, as well as conveying.

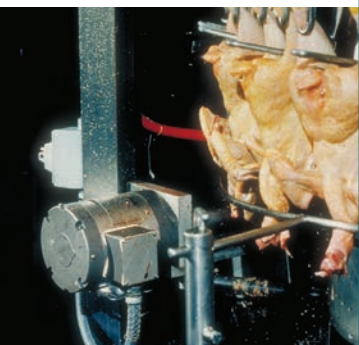
#### BENEFITS:

- Paint-free exterior
- Moisture-resistant interior coating inhibits corrosion
- IRIS® insulation system—1 HP and higher
- Stainless steel shaft, hardware, conduit box, cover, nameplate and fan guard
- Specially-processed endshields and conduit box housing
- Buna-N gaskets and Viton® shaft seals
- Drains for all mounting orientations enable flexible installation

#### THREE-PHASE MOTOR DESIGNS



- Three-phase C face motors with base, 1/2–2 HP
- Three-phase C face motors less base, 1/2–2 HP
- TENV designs
- Inverter rated





# SST DUCK

PAINT-FREE FOR  
ULTRA-CLEAN APPLICATIONS.



When a paint-free motor is needed for ultra-clean operations in the food processing, bottling and pharmaceutical industries, count on LEESON® SST Duck motors to meet the need—at a price that defines value.

## BENEFITS:

- All stainless steel exterior
- Moisture-resistant interior coating inhibits corrosion
- IRIS® insulation system—1 HP and higher
- Full-face nameplate is laser etched in the motor frame
- Buna-N gaskets and Viton® shaft seals on both ends of TEFC motors
- Drains for all mounting orientations enable flexible installation



## SINGLE-PHASE MOTOR DESIGNS

- 1/2–2 HP, 1-phase C face with base
- 1/2–2 HP, 1-phase C face less base
- High starting torque



## THREE-PHASE MOTOR DESIGNS

- 1/3–30 HP, 3-phase C face with base
- 1/3–3 HP, 3-phase C face less base
- Inverter rated
- 10:1 constant torque

The SST Duck Motor Series is our value line of stainless steel motors that is appropriate for use in food processing, pharmaceutical, conveying and bottling applications. 1/3–3 HP, 1- and 3-phase designs.

## Ratings:

- IP55 enclosure protection
- Inverter rated 10:1 constant torque



# PREMIUM STAINLESS DUCK MOTOR

DURABILITY IN FREQUENT WASHDOWN APPLICATIONS.



Our Premium Stainless Duck motor line meets IEEE-841 severe duty requirements and passes IP56 test requirements. These motors are proven performers in frequent washdown applications. AC and DC ratings available.

#### Ratings:

- IP56 enclosure protection
- 300 series stainless steel

Look to the Premium Stainless Duck motor series for proven durability in frequent washdown applications that you may find in food processing, pharmaceutical, dairy, chemical-processing and beverage and bottling industries.

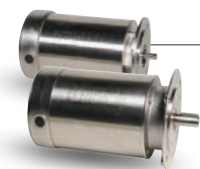
#### BENEFITS:

- All exterior components are 300-series stainless steel
- Full-face nameplate is laser etched in the motor frame
- Endshields are O-ring sealed to motor frame
- Double lipped Viton® shaft seals
- Interior components are coated to protect against corrosion
- Hydrophobic breather plugs are used on AC designs
- IRIS® inverter rated insulation system—AC designs
- IP56 enclosure protection



#### GENERAL PURPOSE PREMIUM STAINLESS MOTORS

- Three-phase, C face with base, 1/2–10 HP
- Three-phase, C face less base, 1/2–5 HP
- Single-phase, C face with base, 1/3–2 HP
- Single-phase, C face less base, 1/3–2 HP



#### IEC STAINLESS MOTORS

- B5 Flange: Round Body, 0.25KW (1/3 HP)–1.5KW (2 HP) 71 Frame, 80 Frame and 90 Frame
- B5 Flange: Rigid Base, 0.25KW (1/3 HP)–0.55KW (3/4 HP), 80 Frame
- B14 Flange: Round Body, 0.25KW (1/3 HP)–0.55KW (3/4 HP), 71 Frame and 80 Frame
- B14 Flange: Round Body, 0.25KW (1/3 HP)–0.55KW (3/4 HP), 80 Frame



#### STAINLESS BRAKE MOTOR

- Three-phase, TENV, C face with base, 1/2–2 HP
- Stearns® stainless steel brakes, 3- and 6-ft lb. rated



#### STAINLESS JM PUMP MOTORS

- Three-phase, TEFC, 1–10 HP
- 1800 and 3600 RPM
- EPACT efficient



# ALL STAINLESS DC MOTORS & AC MILK PUMP MOTORS

GEARED FOR FLEXIBLE INSTALLATION.



The stainless steel, Washguard®, DC motors meet IP-55 test requirements. These SCR rated DC motors have proven to hold up when used in frequent washdown applications. The conduit box is located at the 12:00 position, making electrical connections accessible in various mounting positions. Maximize your application requirements by using one of our washdown duty DC motor controls that are matched to optimize performance with these stainless steel DC motors.

## BENEFITS:

- All exterior components are 300-series stainless steel
- Full fact nameplates are laser etched in motor frame
- Endshields are O-ring sealed to motor frame
- Double lipped Viton® shaft seals
- Constant torque throughout speed range
- Oversized brushes for long brush life

## MILK TRANSFER PUMP MOTORS

- Epoxy painted and stainless ratings available
- Single and three phase
- 3600 RPM
- TENV
- Inverter rated on 3 phase designs
- Solid state encapsulated starting switch on capacitor start motors
- Replacements for WestfaliaSurge™ milk pumps



## C-FACE MOTOR WITH BASE AND C FACE MOTOR LESS BASE

- 1/4 HP to 1 HP
- 90 Volt and 180 Volt

## MILK PUMP MOTORS - THREADED SHAFT

- Epoxy painted and stainless ratings available
- Single and three phase
- 3600 RPM
- TEFC and TENV
- C face with base
- Inverter rated on 3 phase designs
- Solid state encapsulated starting switch on capacitor start motors
- Replacements for BouMatic® milk pumps

## MILK TANK WASHER MOTORS

- Epoxy paint
- 303 grade stainless steel shaft
- CCW rotation facing lead end
- Single phase
- TEFC
- 3600 RPM
- C face with base

Our Washguard® DC stainless steel motors hold up in frequent washdown applications.

### Ratings:

- IP55 enclosure protection
- NEMA® & IEC

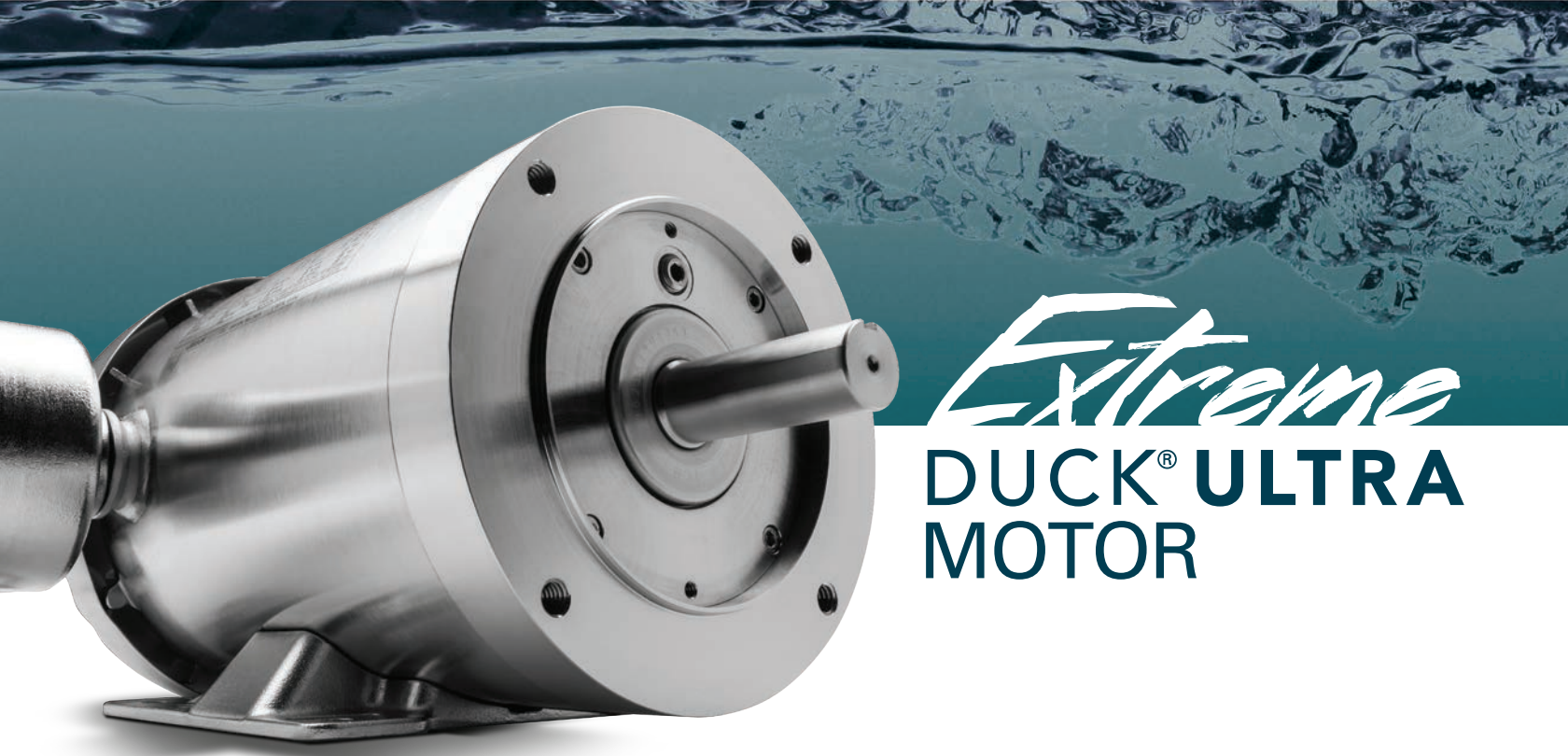


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# *Extreme* DUCK® ULTRA MOTOR

## HIT IT WITH YOUR BEST SHOT.

There's a new, higher bar to cross in the washdown motor category, and LEESON® motors just raised it—again. Building on the success of the industry-leading Extreme Duck® motor series, we took it a giant leap forward with sealing enhancements you just won't find everywhere. We're talking major improvements to the shaft seal technology to handle installation in any orientation, a welded conduit connection to the stainless steel body, and an exclusive vacuum epoxy encapsulation system that ensures whatever is trying to get into the windings is effectively kept out. With an IP69 certification, water, oil, cutting fluids can't get in - go ahead, give it your best shot.





# THERE'S NO MOTOR SEALED LIKE THE EXTREME DUCK® ULTRA MOTOR.



## SPECIFICATIONS

### PERFORMANCE

1/3–3 HP, 3-phase, C face with base

1/3–3 HP, 3-phase, C face less base

2-, 4- and 6-pole

TENV

NEMA Premium® efficiency design

IRIS® inverter-rated insulation system

10:1 constant torque

Full-face nameplate, laser etched in the motor frame

Q-Car™ rotor cartridge design for quick access to the interior

Low-stress winding design

### SEALING

Shaft grounding rings on 1/2–3 HP, 4-pole, rigid C face

Enhanced encapsulation process

Non-wicking lead wires

Two-piece shaft seal with flinger

### INSTALLATION

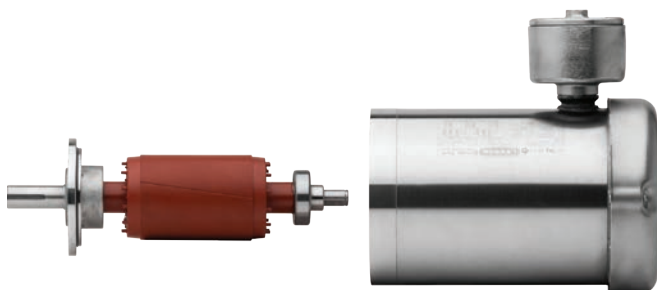
Color-coded motor leads

Chemical and abrasion-resistant lead markers

Welded pipe nipple at ingress on TEFC models

Conduit box rotates 360 degrees on TEFC models

- **IP69 Certified IEC60529**
- **IP69K tested per DIN 40050-9**



## The finest product design should never get in the way of your ability to install it.

That's true whether it's an OEM installation in a controlled environment, a retrofit on the production line floor, or in-line maintenance when every lost minute counts. So we watched how you install, noted where time adds up, and asked how we could help improve it. The result? Smart design features such as color-coded leads, a conduit box that rotates to enable convenient wire entry, and exclusive Q-Car™ rotor cartridge design for interior access without removing the motor from the installation.

When every last minute counts, the IP69 certified LEESON® Extreme Duck® Ultra motor will keep your operation up and running. Where competitor's motors require special tools to replace the bearings and seals, The Extreme Duck Ultra motor makes it easy. Leaving the motor in the application, simply remove 4 bolts and replace the entire Q-Car (quick access) rotor cartridge assembly. Q-Car kits are available from your local LEESON motors representative. No damaged seals, no special tools and your operation is back on line. Extreme Duck Ultra motor, when uptime matters most.

300 Series stainless steel components include the frame, base, conduit box cover, endshields and bearing carrier cover. It's the perfect motor design for extreme washdown conditions.

### Ratings:

- IP69 enclosure protection
- IRIS® inverter-rated insulation system
- NEMA Premium®





# AC INVERTERS & DC CONTROLS

PERFORMANCE MATCHED SOLUTIONS.



These AC and DC controls are matched to our Washguard® motors for optimal performance.

**Ratings:**

- IP65 on stainless steel and vector series
- IP65/IP54 on epoxy coated
- White epoxy and stainless steel finishes

We have AC and DC controls that are performance matched to our Washguard® 3-phase AC and DC motors. Our AC inverter offering includes white epoxy, stainless steel or plastic enclosures that meet IP65/IP54 enclosure protection. We offer both our Micro Series line and our Vector duty series line having washdown duty protection. Our DC washdown duty controls are SCR rated for either permanent magnet or shunt wound DC motors. We also offer a washdown duty regenerative SCR control that is designed for high cycling and forward and reverse applications.

**BENEFITS:**

**Washguard® AC Control Benefits:**

- Stainless steel, epoxy painted or plastic enclosure protection
- Micro series controls have an intuitive alphanumeric display
- Vector Series has a 6-button display interface
- Multiple pre-set speed function
- Forward and reverse
- Programmable acceleration and deceleration times
- Password protected
- Serial communication port for interface
- Designs for both 1-phase and 3-phase input/output

**Washguard DC Control Benefits:**

- SCR type controls
- NEMA® 4X enclosure protection
- Reversing and non-reversing designs
- Regenerative – four quadrant designs



**WHITE EPOXY WASHGUARD AC CONTROLS**

- 1/2 HP to 125 HP
- 200–240 / 400–480 and 480–590 input voltage



**STAINLESS STEEL WASHGUARD AC CONTROLS**

- 1/2 HP to 125 HP
- 200–240 / 400–480 and 480–590 input voltage



**VECTOR SERIES WASHGUARD AC CONTROLS**

- Plastic enclosure
- 1/2 HP to 30 HP
- 200–240 / 400–480 and 480–590 voltage



**WASHGUARD DC CONTROLS**

- 1/8 HP to 3 HP
- 10 amp and 15 amp output
- Single-phase—115V and 230V input
- DC—90V and 180V output





## CHEMICAL RESISTANCE COMPARISON

CHEMICAL NAME	% CONCENTRATION	EXPOSURE	WHITE EPOXY	STAINLESS STEEL
Fresh Water	100	Continuous	Excellent	Excellent
Salt Water	5	Continuous	Excellent	Excellent
Salt Brine	Dilute	Continuous	Fair	Good
Ammonium Hydroxide	Dilute	Continuous	Good	Excellent
Calcium Hydroxide (Lime)	100	Intermittent	Good	Excellent
Citric Acid	10	Continuous	Good	Excellent
Ethylene Glycol	100	Continuous	Excellent	Excellent
Hydrochloric Acid	37	Intermittent	Good	Poor
Lactic Acid	Dilute	Intermittent	Excellent	Excellent
Lactic Acid	100	Intermittent	Fair	Fair
Potassium Hydroxide	50	Intermittent	Fair	Fair
Sodium Hydroxide	5	Continuous	Fair	Excellent
Sodium Hydroxide	20	Continuous	Fair	Excellent
Sodium Hydroxide	50	Continuous	Excellent	Excellent
Sodium Hypochlorite (Bleach)	15	Intermittent	Excellent	Excellent
Sulfuric Acid	10	Intermittent	Fair	Fair
Animal Fats	NA	Continuous	Excellent	Excellent
Mineral Oils	NA	Continuous	Excellent	Excellent
Vegetable Oils	NA	Continuous	Excellent	Excellent
Cutting Oils	NA	Continuous	Excellent	Excellent
Detergents	NA	Continuous	Excellent	Excellent
Hydraulic Fluid	NA	Continuous	Excellent	Excellent
Lubricating Oils	NA	Continuous	Excellent	Excellent
General Weathering	NA	Continuous	Fair	Excellent
Mold/Mildew	NA	Continuous	Excellent	Excellent
Light Abrasion	NA	Continuous	Excellent	Excellent
Heavy Abrasion	NA	Continuous	Fair	Excellent



# HERE'S A LITTLE SAVINGS- SIZZLE FOR YOU.

Investing in quality can have huge returns. The tougher the motor, the more you'll save by avoiding expensive downtime, maintenance and repair costs. See how two companies are using LEESON® motor technology to pay back big.

## BEEF PROCESSING PLANT

**PROCESSES:** 10,000 cattle per week.

**APPLICATION:** 600 motors.

**CHALLENGE:** The motors face high pressure washdown conditions daily, consisting of bleach and boiling water. Depending on the application, typical motor life was only 3–12 months.

**SOLUTION:** Transition to Extreme Duck® Ultra motors.

### RESULT

**600  
Motors** | **\$940,000+**  
Saved in downtime and motor purchases over five years

# Extreme DUCK® ULTRA



## BACON PROCESSING FACILITY

**PRODUCES:** 3 million pounds of bacon per week.

**APPLICATION:** 26 white epoxy washdown pump motors.

**CHALLENGE:** Washdown conditions include high-pressure spray with high-temperature cleaning solutions once a day. The motors were experiencing high failure rates, with the typical life averaging only 3–4 months.

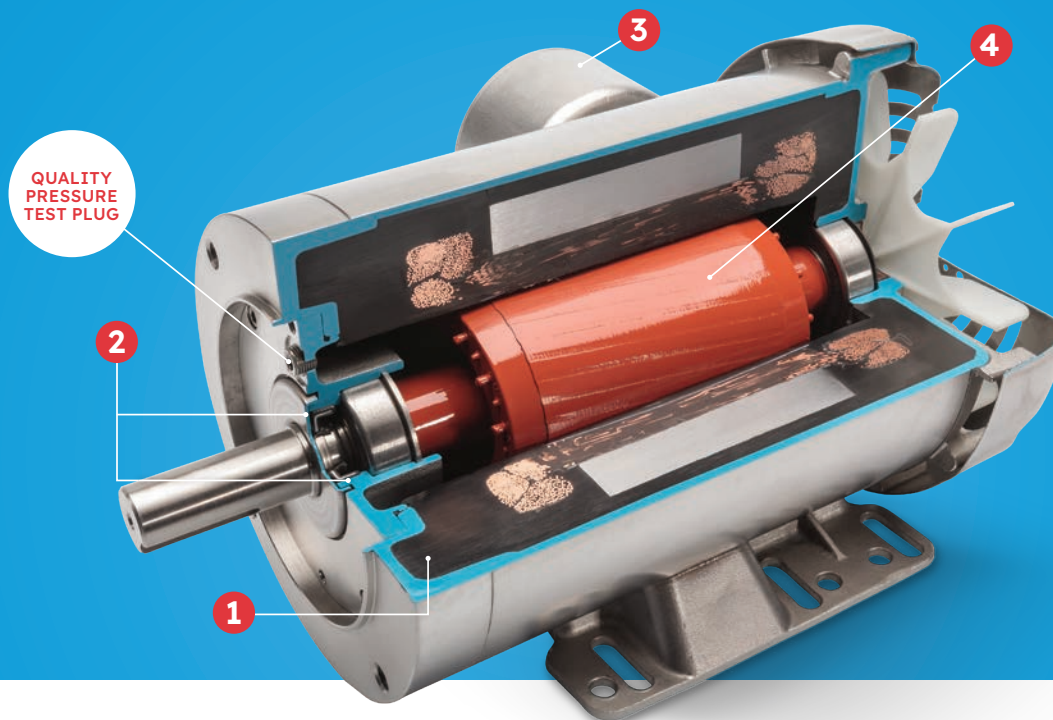
**SOLUTION:** Existing motors were replaced with Extreme Duck® Ultra motors.

### RESULT

**26  
Motors** | **\$64,000+**  
Saved over 3 years



# WHAT IF... YOU COULD REDUCE YOUR DOWNTIME WITH JUST ONE MOTOR?



## WHEN UPTIME IS MISSION CRITICAL...THERE'S NO MOTOR SEALED LIKE THE EXTREME DUCK ULTRA MOTOR

- 1 **Fully Encapsulated end-to-end epoxy stator** — No need for maintenance personnel to worry about properly installed drain plugs or breathers making it an ideal motor for installation in any orientation.

**Tested and compliant to the IP69K standard and UL certified to IP69** — This third-party certification, by UL, verifies the extraordinary sealing technologies that completely resist water ingress. (IP69k compliant. Third party tested to IP69k per DIN-40050-9).

- 2 **Shaft Seal Technology** — This unique design provides three points of protection on the drive end of the motor.
- 3 **360° Rotatable O-Ring Sealed Conduit Box** — For ease and flexibility of conduit installation.
- 4 **Patented and exclusive to the Extreme Duck Ultra**, the Q-Car rotor design provides a quick and easy way for maintenance personnel to replace worn out bearings and seals with 4 easy steps all while maintaining the IP69 rating saving you significant time and costs. The Q-Car Kit is a convenient and economical solution for bearing and seal replacement and costs less than 20% of overall cost of motor.



## **Regal Rexnord**

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