

Food & Beverage Industry



BALDOR[®]

The Industry's Most Preferred

Now more than ever, it's essential that your food and beverage operations run smoothly and efficiently. It's imperative that all the products you specify: electric motors, mechanical power transmission and adjustable speed drives perform reliably-at maximum efficiency-around the clock. Baldor Electric is your one dependable source for a complete line of solutions to improve your operation by:

- Reducing energy consumption
- Increasing equipment uptime
- Eliminating wasteful maintenance
- Reducing on site inventory

Baldor provides total power transmission product solutions. We offer a full line of field proven, energy efficient Baldor•Reliance® motors designed specifically for the food and beverage industry, including standard painted, paint-free and stainless steel washdown duty motors. Combined with Baldor washdown duty V*S drives, Baldor provides more solutions than any other. Our Dodge® gearing, bearings and couplings provide excellent operation in both wet and dry applications, as well as our Maska® sheaves and bushings. With our in-depth understanding of your food and beverage processing needs, Baldor products provide the total value customers demand and deserve.

BALDOR® • RELIANCE®

DODGE®

MASKA

BALDOR®

Process	Products							
	Super-E® Stainless	Super-E Motors	Stainless Servo Motors	EZ-Kleen Tigear-2	Variable Speed Drives	Quantis	Bearings	Generators
Conveying	x			x	x	x	x	x
Batching	x			x	x	x	x	x
Blending/Mixing	x			x	x	x	x	x
Converting	x		x	x	x	x	x	x
Handling		x		x	x	x		x
Packaging	x	x	x	x	x	x	x	x

$$V_p = \frac{Q_p \times S_p}{C \times T}$$

Q = Quality
C = Cost

S = Service
T = Time

P = Perceived

The Value Formula illustrates the importance of Quality, Service, Cost and Time in shaping our customers' perception of Value.



Typical Food and Beverage OPERATION

Environment

Very Wet →

Wet

Meat/Poultry Dairy Fruit/Vegetable Ready to eat/frozen Beverage

Converting

Converting the raw recipe into finished food for packaging by blanching, baking/cooking, chilling, emulsifying, freezing, frying, homogenizing, peeling, pasteurizing and washing.

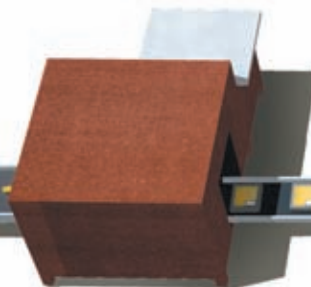
Cooking/Baking



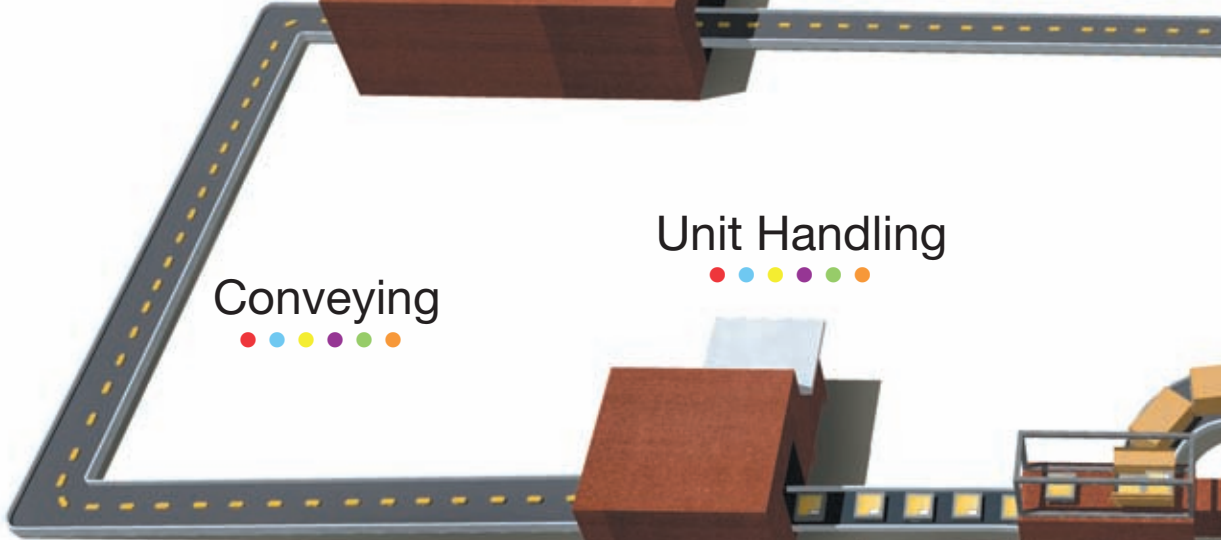
Drying/Chilling



Unit Handling



Conveying



Material Handling

Moving liquids or solids from station-to-station through a pump or conveyor for processing.

Map Legend

-  Motors
-  Gearing
-  Bearings
-  PT Components
-  Drives
-  Generators

→ **Dry** →

Confectionery Baking cereal/snacks grain/soy sugar/spices

Batch Processing

Preparing the raw ingredients by grinding, mixing, washing, peeling, extruding or blending.

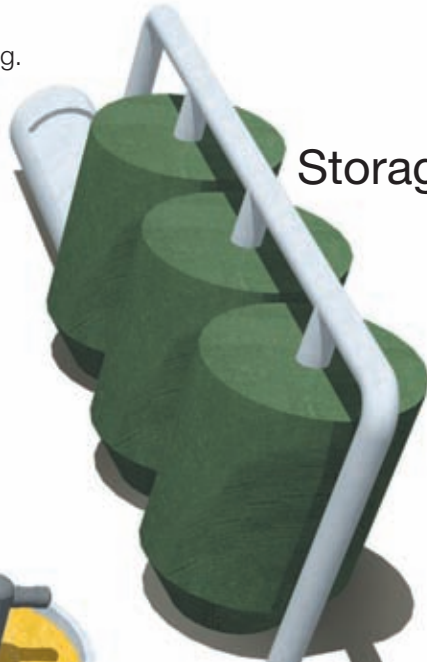
Mixing/
Blending



Batching



Storage



Pumping



Palletizing



Packaging



Packaging

Machines that fill, carton, bag, case pack, palletize and shrink wrap for shipment.

Food and Beverage Solutions

from **BALDOR**



SSE Stainless Super-E Washdown Motor

- ½ to 10 hp (0.37 to 7.5 kW)
- 56C thru 215TC Frames
- 3600 and 1800 rpm
- Three phase, 208-230/460 volt, 60 Hz, 1.15 s.f.
- C-face with base and no base
- Premium Efficient meets the new 2010 EISA requirements
- All stainless steel housing, with welded conduit box
- Encapsulated winding and conduit box, prevents any moisture from reaching the winding
- Patented external shaft and seal system
- 3 year warranty



Paint Free Washdown Duty

- ½ to 10 hp (0.37 to 7.5 kW)
- 56C thru 215TC Frames
- 1800 rpm
- Three phase, 208-230/460 volt, 60 Hz, 1.15 s.f.
- C-face with base and no base
- Super-E, premium efficient models meet 2010 EISA requirements
- Stainless steel frame, base, shaft, and hardware
- Tropicalized insulation system with moisture resistant ISR magnet wire
- Non contacting labyrinth seal on DE, contacting lip seal on ODE
- Inverter capable models available
- 3 year warranty on Super-E models



Standard-E and Super-E Stainless Washdown Motors

- ½ to 20 hp (0.37 to 15 kW)
- 56C thru 256TC Frames
- 3600 and 1800 rpm
- Three phase, 208-230/460 volt, 60 Hz, 1.15 s.f.
- C-face with base and no base
- Super-E, premium efficient models meet 2010 EISA requirements
- All external surfaces are stainless steel
- Four condensate drains in each end plate
- Lip seals on DE and ODE end
- 3 year warranty on Super-E models



Inverter and Vector, Washdown Duty Motors

- ½ to 10 hp (0.37 to 7.5 kW)
- 56C to 254TC Frames
- Washdown and Stainless Washdown designs
- 1800 base rpm, 6000 max rpm
- 230/460 Volts, 1.0 s.f.
- Tropicalized, moisture resistant, Class H insulation system
- C-face with base and no base
- 1000:1 constant torque speed range
- Meets the requirements of NEMA MG1 Part 31.4.4.2
- Vector motor includes 1024PPR, HS25 encoder with MS connector
- Provision to mount optional HS25 encoder provided on Inverter motors



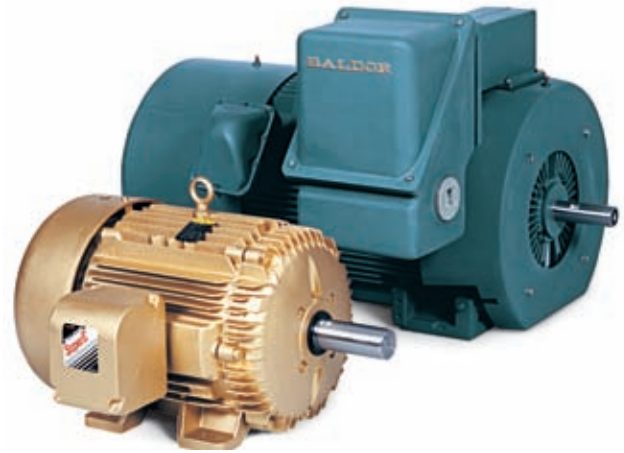
Washdown Duty Motors

- ½ to 20 hp (0.37 to 15 kW)
- 56C thru 256TC Frames
- 3600, 1800, and 1200 rpm
- Single phase, 115/260 volt, 60 Hz, 1.15 s.f.
- Three phase, 208-230/460 or 575 volt, 60 Hz, 1.15 s.f.
- Foot mounted, C-face with base and no base available
- Super-E, premium efficient models meet 2010 EISA requirements
- Stainless hardware, moisture sealant of bolt heads and between frame and endplates
- Tropicalized insulation system
- Super-E models meet the requirements of NEMA MG1 Part 31.4.4.2 for VFD use and are considered Inverter Ready
- Double sealed ball bearings with V ring slinger
- Electrostatically applied epoxy finish over autophoretic primer
- 3 year warranty on Super-E models



Super-E Brake Motors

- ½ to 3 hp (0.37 to 2.2 kW)
- 56 thru 286T Frames
- Standard and Washdown designs
- 1800 rpm
- Three phase, 208-230/460V, 230/460V, 60 Hz, 1.15 s.f.
- Foot mounted, C-face with base
- Super-E premium efficient meeting 2010 EISA requirements
- Super-E Inverter Ready design meets the requirement of NEMA MG1 Part 31.4.4.2 for VFD use
- Brake leads available for separate connection when used with adjustable speed drive
- NEMA standard BA dimensions



Super-E Premium Efficient

- ½-500 hp (0.37 to 372 kW)
- 56 thru 5010 Frames
- 3600, 1800 and 1200 rpm
- 230/460V, 460V and 575V, 60 Hz, 1.15 s.f.
- Foot mounted, C-face with base and no base
- IP54 TEFC enclosures
- Super-E models meet 2010 EISA requirements
- Super-E models meet the requirements of NEMA MG1 Part 31.4.4.2 for VFD use and are considered Inverter Ready
- 3 year warranty



Severe Duty and 841XL

- 1 to 500 hp CP and ECP Severe Duty motors (0.75 to 372 kW)
- 1 to 250 hp 841XL that meet or exceed IEEE 841
- 143T thru 449T Frames
- 3600, 1800 and 1200 and 900 rpm
- 230/460V, 460V and 575V, 60 Hz, 1.15 s.f.
- Foot mounted, C-face with base and no base
- Super-E models meet 2010 EISA requirements
- Super-E models meet the requirements of NEMA MG1 Part 31.4.4.2 for VFD use and are considered Inverter Ready
- All cast iron construction including frame, end brackets, conduit box and fan cover
- Positive Lubrication System (PLS) channels grease directly into the bearing track
- Inpro/Seal™ VBXX Bearing Isolators on both ends of motor (841XL motors)
- IP56 on 841XL
- IP55 on Severe Duty
- 3 year warranty on Super-E Severe Duty
- 5 year warranty on 841XL motors

Food and Beverage Solutions

from **BALDOR**



Stainless Steel Servo Motors

- 4 lb-in thru 283 lb-in continuous torque (0.45 thru 32 N-m)
- Identical speeds and ratings as standard servos
- IEC and NEMA frames available (14 to 37 cm square)
- IP67 sealing
- Optional holding brake
- FDA approved all stainless exterior
- BISSC/UL/CSA/CE certifications
- Laser etched nameplate
- Resolver, incremental, and absolute feedback available



Servo Drives

- Operate either rotary or linear brushless servo motors
- PC or Keypad setup
- 115/230/460V models — continuous to 54 amps
- Full auto-tuning wizard — current velocity and position
- Programmable
- Device Net, ProfibusDP, CANopen, Ethernet



Linear Motors

- Many different designs: Iron Core, Cog-free, Linear Induction, Single and Dual Axis Steppers, DC Brushed, Polynoid and Non-Commutated Linear “Actuator”, Custom Designs
- Forces up to 3100 lbs (13.8 kN)
- Speeds up to 5 m/sec, accelerations up to 10 Gs
- Modular tracks for very long travels
- Open loop or closed loop operation
- Kits and ready to use stages available
- Lightweight Dual Axis Stepper platens that can be mounted upside down, allowing motor to “hang” in midair on air bearings
- Used in pick and place, material handling, people moving, and other linear and curved applications



Baldor V*S Inverter and Vector Drives

- 1 to 250hp (.75 to 186 kW)
- 115/230V single phase
- 230V, 460V, 600V 3 phase
- NEMA1 or NEMA4X (1-10hp)(0.75 to 7.5 kW)
- Advanced LCD display
- General purpose sensorless vector (Inverter Drives)
- Closed loop Vector with encoder feedback (Vector Drives)



VS1SM AC Microdrive

- ½ to 3hp (.37 to 2.2 kW)
- 230V Single phase
- IP20 Panel Mount
- Internal EMC filter
- Basic Parameters
- LED display and Speed Pot.



VS1MX AC Drive

- ½ to 10hp (.37 to 7.5 kW)
- 115V and 230V 1 phase
- 230V and 460V 3 phase
- NEMA 12 (IP55) or
- NEMA 4 (IP56)
- Local disconnect
- Basic Parameters
- Potentiometer/Switch control



VS1ST AC Drive

- ½ to 15hp (.37 to 11 kW)
- 115V and 230V 1 phase
- 230V and 460V 3 phase
- IP20 DIN Rail Mount
- Starter Replacement
- Basic Parameters
- Easy to wire and install



VS1MD AC Drive

- ½ to 30hp (.37 to 22 kW)
- 230V and 460V 3 phase
- IP20 Panel Mount w/ NEMA 1 kit
- Easy to Program
- High Performance Micro
- Built in LED Display
- Advanced Capability
- Communication Options

Food and Beverage Solutions

from **BALDOR**



Grip Tight Bearings

- Product Name: Grip Tight "GT"
- Bearing Type: Ball
- Housing Type: Pillow Block, Two and Four Bolt Flange, Flange Bracket, Material Handling, Wide, Narrow, and Type "G" Take Up", Cylindrical, Screw Conveyor Hanger
- Housing Materials: Cast Iron
- Bore Range: 1/2" to 3-1/2" (17 mm to 85 mm)
- Mounting: Tapered Sleeve, Adapter Mounted
- Seal Options: Rubber contact seal and Flinger, Labyrinth "Lo Torque" - Shield and Flinger.
- End covers available for most sizes
- Interchangeable mounting dimensions with competitive products
- Unirex N3 Grease
- Plus or minus 2° static misalignment
- Inserts available for replacement sale
- Varying Duty Types (in rank) Medium Duty - GTM; Normal Duty - GT
- Concentric Clamp fit on the shaft
- Patented Internal Bearing puller - integral to the inner ring
- High Temperature Available - up to 400 degrees Fahrenheit



E-Z Kleen Mounted Ball Bearings

- 3/4" to 2" Bore Sizes available (20 mm to 50 mm)
- Corrosion resistant and standard inserts
- Polymer and stainless housings
- Proguard Seal plus Flinger
- Three locking styles: 65° setscrew (SC), concentric clamp collar (DL) and thin wall adapter (GT)
- BEV modification available for the beverage industry
- Interchangeable mounting dimensions with most competitive products
- Anti-rotation device prevents insert from spinning in the housing
- Plus or minus 2° static misalignment
- Food grade H1 grease standard



SC Mounted Ball Bearings

- Bearing Type: Ball
- Housing Type: Pillow Block, Two and Four Bolt Flange, Flange Bracket, Material Handling, Wide, Narrow, and Type "G" Take Up", Cylindrical, Screw Conveyor Hanger
- Housing Materials: Cast Iron and Stamped Steel (Light Duty Only)
- Bore Range: 1/2" to 3-1/2" (17 mm to 85 mm)
- Mounting: Dual Setscrew, 65 degrees apart
- Seal Options: Rubber Contact Seal, Rubber contact seal and Flinger, Labyrinth "Lo Torque" - Shield and Flinger.
- End covers available for most sizes
- Interchangeable mounting dimensions with competitive products
- Anti-Rotation Pin (SC and SCM only)
- Plus or minus 2° static misalignment
- Unirex N3 Grease
- Plus or minus 2° static misalignment
- Inserts available for replacement sale
- Varying Duty Types (in rank) Medium Duty - SCM; Normal Duty - SC, Intermediate Duty - VSC; Light Duty - SL
- High Temperature Available - up to 400 degrees Fahrenheit



Imperial IP and ISN Bearings

- Bearing Type: Spherical
- Housing type: Pillow block, flange, take up. Cast Iron or Steel (in certain configurations) ISN
- Bore Range: 1-1/8 to 7" (30 mm to 125 mm)
- Mounting: Imperial adapter system
- Seal Options: Trident triple lip or Labyrinth
- Replaceable inserts
- Field convertible between expansion & non-expansion



USAF Bearings

- Bearing Type: Spherical
- Housing type: Pillow block, split, SAF dimensions
- Bore Range: 1-7/16" to 10-1/2" (40 mm to 140 mm)
- Mounting: Sleeve, Nut, Washer
- Seal Options: Multiple
- Housings ready for oil lubrication (circulating or static)
- SAF-XT (short length through bore) & SAFS (steel housed) versions also available



Sleevoil® Family

- Product Name: EZ-Kleen Sleeve Bearing
- Bearing Type: Plain
- Housing type: Pillow block, Tapped base, flange, take-up, hanger,
- Bore Range: 1/2" - 2" (17 mm to 50 mm)
- Mounting: Shaft Collar
- Seal Options: None
- Food Grade
- No Lubrication Required



Para-Flex G-Series

- Coupling Type: Elastomeric Tire (Shear)
- hp, Torque, and Speed Ratings: hp – up to 5800 (4325 kW); Torque – up to 453,000 in-lb. (51189 N-m); Speed – up to 4,500 rpm
- Shaft Attachment: Finished bore, Taper-Lock bushed, Bored-to-Size, Grip-Tight bushed (G-Series only); spacer version available
- Bore Range: Up to 11" (280 mm)
- Highest misalignment capability of any coupling in the industry à 4-degrees angular, 1/8" parallel, and 5/16" axial
- Superior shock-load dampening and vibration control because of torsionally soft rubber tire element, especially compared to polyurethane elastomeric couplings
- 5-year limited warranty on the element
- Re-designed G-Series flanges offer the potential for higher torque and larger bore sizes than dimensionally equivalent competitive couplings



D-Flex

- Coupling Type: Elastomeric Sleeve (Shear)
- hp, Torque, and Speed Ratings: hp – up to 2000 (1491 kW); Torque – up to 47,250 in-lb. (5339 N-m); Speed – up to 9,200 rpm
- Shaft Attachment: Finished bore, QD-bushed; spacer version available
- Bore Range: Up to 6" (152mm)
- Balanced to AGMA 9 standards
- Set screws placed at 65-degree angle for better shaft grip
- Torsionally flexible
- Easily replaceable sleeve

Food and Beverage Solutions

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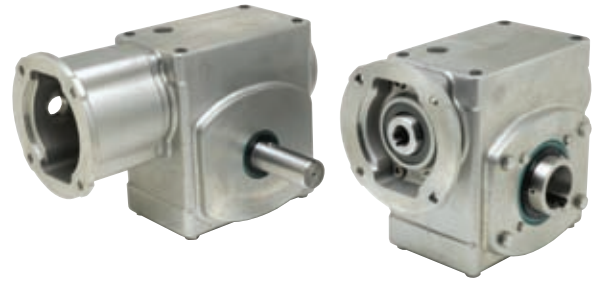
Stainless Steel Right Angle, Worm Gear Speed Reducers

- Output ratings to 2300 lb-in (300 N-m) 1/4 to 7.5 hp (0.18 to 5.6 kW)
- 4 case sizes covering center distances from 1.75" to 3.25" (44 mm to 82 mm)
- Quill type input mounting
- Single and Double reductions from 5:1 to 3600:1
- Premium 316 Stainless Steel housings
- 300 series Stainless Steel output shaft and stainless hardware
- Totally enclosed, vent-less, O-ring sealed system
- Factory filled with H1 food grade synthetic lubrication
- Maintenance free operation
- BISSC certified



Washdown Right Angle, Worm Gear Speed Reducers

- Output ratings to 7000 lb-in (791 N-m) 1/4 hp to 10 hp (0.18 to 7.5 kW)
- 9 case sizes covering center distances from 1.33" to 3.25" (34 mm to 82 mm)
- Mounting Configurations: Quill and 3-piece Coupled input.
- Single and Double reductions from 5:1 to 3600:1
- Right Angle, Parallel shaft and ration multipliers
- Cast Iron housing coated with FDA approved epoxy paint
- 300 series Stainless Steel output shaft and stainless hardware
- Totally enclosed vent-less sealed system
- Factory filled with H1 food grade synthetic lubrication
- Maintenance free operation
- BISSC certified



Ultra Kleen Tigear-2 Right Angle, Worm Gear Speed Reducers

- Ratings, 100 to 6800 lb-in (11 to 768 N-m) 1/4 to 10 hp (0.18 to 7.5 kW)
- Size: 5 case sizes covering center distances from 1.75" to 3.00" (44 mm to 76 mm)
- Mounting Configurations: Quill and 3-piece Coupled input.
- Premium 316 Stainless Steel housings.
- 300 series Stainless Steel solid or hollow output shafts and stainless hardware.
- Totally enclosed ventless sealing design.
- Factory filled with H1 food grade synthetic lubrication.
- Two-piece harsh duty output seals.
- Maintenance free operation



E-Z Kleen Tigear-2 Right Angle, Worm Gear Speed Reducers

- Ratings, 100 to 6800 lb-in (11 to 768 N-m) 1/4 to 10hp (0.18 to 7.5 kW)
- Size: 8 case sizes covering center distances from 1.33" to 3.50"
- Mounting Configurations: Quill and 3-piece Coupled input.
- 300 series Stainless Steel solid or hollow output shafts and stainless hardware.
- Cast iron gearcase housing with 13-step coating system provides three times the corrosion resistance of standard epoxy painted units.
- Totally enclosed ventless sealing design.
- Factory filled with HI food grade synthetic lubrication.
- Two-piece harsh duty output seals.
- Maintenance free operation.



Quantis Gold

- Gear type: ILH Inline Helical, RHB Right Angle Helical Bevel, MSM Motorized Shaft Mount
- Ratings: 1/4 hp - 75 hp (0.18 to 55 kW)
- Ratios: 1.5:1 - 300:1+ (capable of higher ratios through tandem configuration)
- Size: 8 Case sizes per housing configuration
- Mounting: Clamp Collar, 3-piece coupled, Integral Gearmotor, Separate Input. Solid, Straight Hollow, Tapered Hollow output
- ILH / MSM Efficiency of 98% per stage, RHB Efficiency of 95% per stage
- All units shipped filled with oil from the factory and are installation ready
- Provided with a Baldor Super-E premium efficient motor



Quantis Gearmotors and Reducers

- Gear type: ILH Inline Helical, RHB Right Angle Helical Bevel, MSM Motorized Shaft Mount
- Ratings: 1/4 hp - 75 hp (0.18 to 55 kW)
- Ratios: 1.5:1 - 300:1+ (capable of higher ratios through tandem configuration)
- Size: 8 Case sizes per housing configuration
- Mounting: Clamp Collar, 3-piece coupled, Integral Gearmotor, Separate Input. Solid, Straight Hollow, Tapered Hollow output
- ILH / MSM Efficiency of 98% per stage, RHB Efficiency of 95% per stage
- Epoxy paint in both stainless steel and white colors
- Factory filled Food Grade USDA H-1 Lubrication
- XT Harsh Duty output seal



TORQUE-ARM™ II Shaft Mount Reducers

- Ratings, 3,000-325,000 lb-in (339-36725 N-m)
- Size: TA0107L - TA12608H
- Mounting Configurations: Shaft Mounted, Screw Conveyor Adapter mounted
- Twin tapered bushing system, Short shaft twin tapered bushing system
- Torque arm tie rods
- Screw conveyor adapters, Screw conveyor drive shafts
- HNBR oil seals with additional contaminant excluder seals
- Backtops
- Motor mounts
- Belt guards
- Harsh duty options available

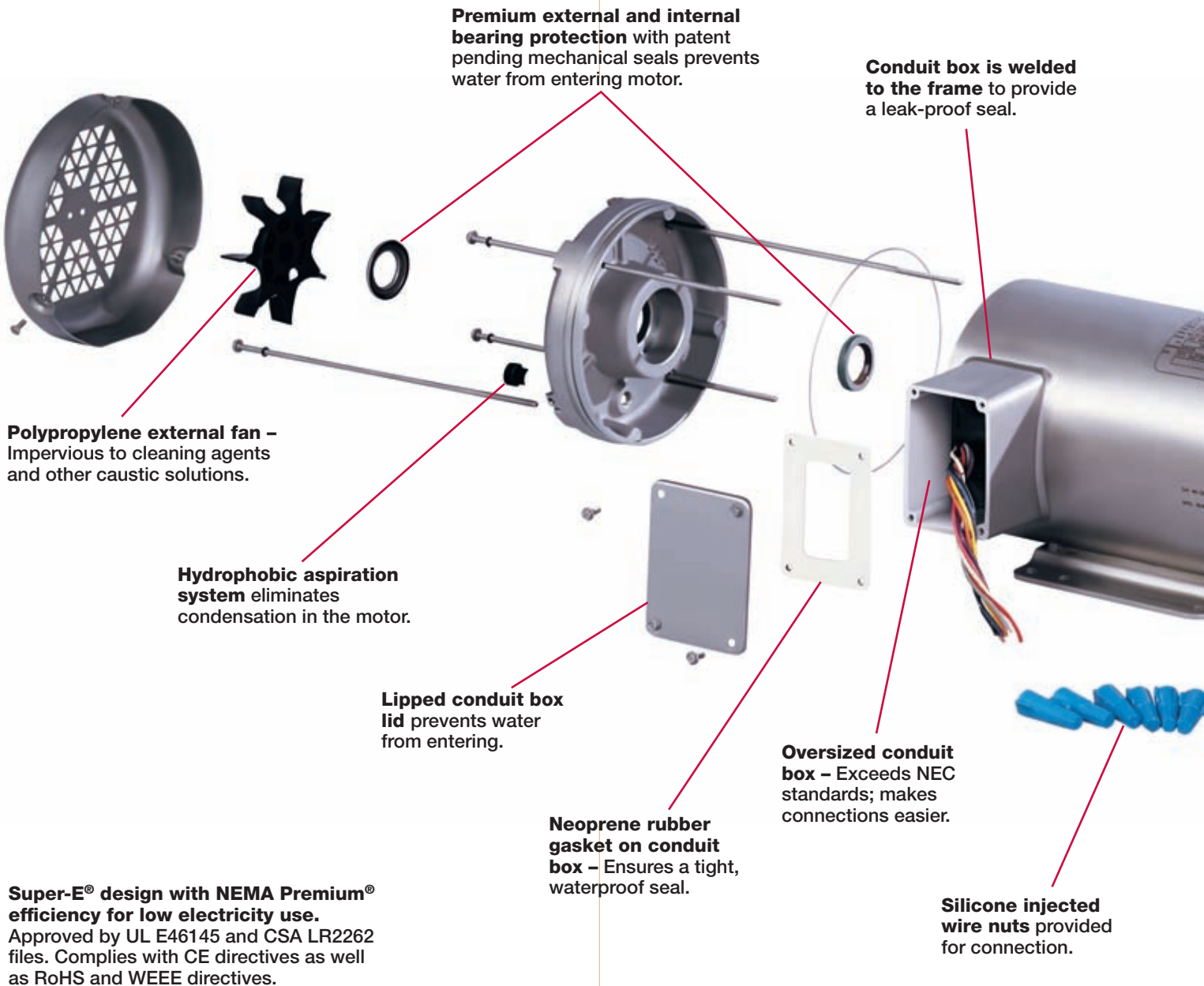


Taper-Lock Mechanical Drive Component

- Sheaves: Taper-Lock and QD Bushing styles in multiple belt profiles 3V, 5V, 8V, A, B, C, D, E
- Bushings: Wide range of QD and Taper-Lock Bushing size
- Fhp Sheaves: Fixed Bore and Bushed Light Duty, Variable Pitch, Adjustable Pitch, Heavy Duty Adj. Pitch and Step
- Synchronous Pulleys: Multiple tooth profiles available including Trapezoidal, Curvilinear, Modified Curvilinear and Reinforced Parabolic
- Belts: Wide range of Classical and Narrow V-Belts, Cogged, Banded, Double V, Fhp and Synchronous Belts
- Custom: Made-to-Order Sheaves and Bushing capabilities

SSE Stainless Steel Super-E[®] Motor from BALDOR

All stainless steel construction including housing, conduit box and cover, base, fan cover and endplates. Impervious to rust and deterioration caused by high pressure caustic sanitizing. Provides longer trouble-free life than conventional motors.



Complete nameplate data laser etched on the motor frame, identification numbers on both sides. Eliminates contamination trapped beneath bolt-on nameplates.

Windings engineered for durability – double-dipped and baked varnish eliminates voids provides stronger bond and improves moisture resistance. Encapsulation using Baldor's E3 Effusion Epoxy Encapsulation™ process adds another level of internal contaminant and moisture protection. Extends into conduit box to prevent moisture entering the motor winding.

Precision die cast aluminum rotor – Precision balanced and coated with an epoxy primer to resist corrosion.

Premium external and internal bearing protection with patent pending mechanical seals prevents water from entering motor.

Shaft made of 300 stainless – Prevents rust and corrosion.

High temperature Class F insulation with low temperature (Class B) rise – Provides longer insulation and bearing life.

Exclusive ISR® (Inverter Spike Resistant) magnet wire – Up to 100 times more resistant to voltage spikes; provides an added thermal safety margin.

Locked bearing construction on C-face motors – Reduces endplay and allows vertical mounting.

Exxon Polyrex® EM grease – Standard double sealed motor bearings better for improved lubrication life. PolyrexEM has greater shear stability and superior resistance to washout, rust and corrosion.

Machined drip grooves in endplates.

Multiple foot mounting holes – Makes motor change-out easy.

Neoprene o-rings seal frame to endplate joint and prevent water entry.

MISSION

"Baldor is to be the best (as determined by our customers) marketers, designers, and manufacturers of industrial electric motors, mechanical power transmission products, drives and generators."



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