Petroleum/ Chemical Industry




BALDOR®

The Industry's Most Preferred

The chemical and petroleum industries provide the key elements for many products. Converting hydrocarbons by physical or chemical means, the PetroChem industry helps meet the world's basic need for fuel, food, shelter and health.

By investing in technology, the PetroChem industry meets the challenge of operating efficiently while meeting environmental standards. This industry continues to look for ways to save energy, to run safer, and reduce any impact on the environment.

Baldor Electric offers a full line of performance-proven energy-efficient motors, variable speed drives, bearings, speed reducers, and conveyor components for PetroChem. Products engineered with industry driven designs and patented technology that ensure greater uptime, with less maintenance. With our in-depth understanding of your application needs, Baldor•Reliance, Dodge and Maska brand products provide a dependable source for the most trusted brands in the chemical and petroleum industries.

BALDOR • RELIANCE

DODGE®

MASKA

BALDOR®

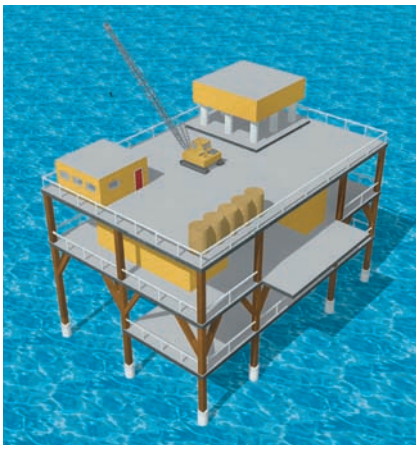
Process	Products					
	Motors	Gearing	Bearing	PT Components	Variable Speed Drives	Generators
Petroleum Operation						
Conventional Oil Extraction	x		x	x		x
Unconventional Oil Extraction	x	x	x	x		
Refining	x		x	x	x	x
Transportation	x					x
Chemical Operation						
Material Handling	x	x	x	x	x	
Boilers	x		x		x	
Cooling	x		x	x	x	
Processing	x	x	x	x	x	x
Flare	x				x	
Packaging & Shipping	x	x	x	x	x	

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

Q = Quality **S = Service**
C = Cost **T = Time**
P = Perceived

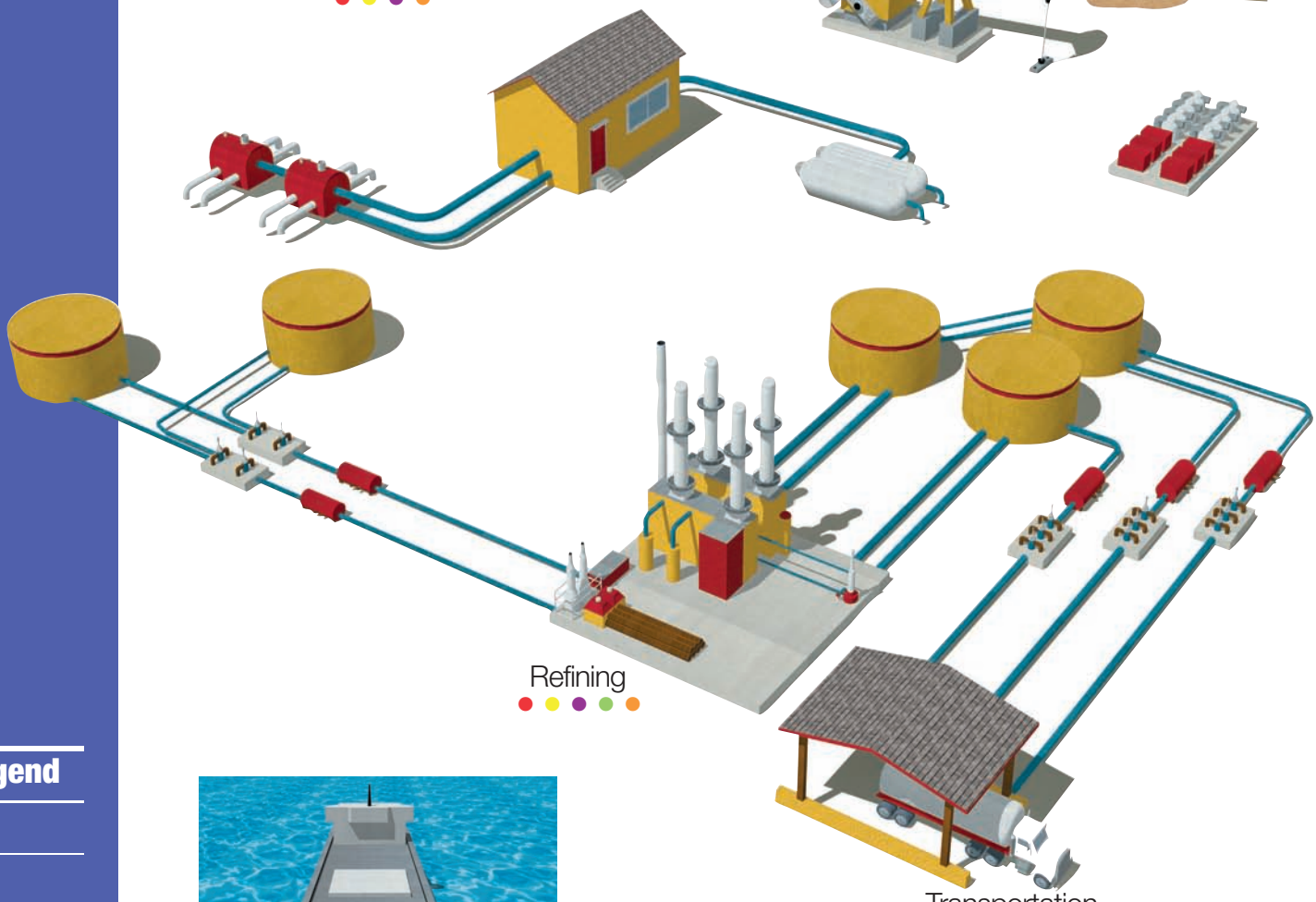
The Value Formula illustrates the importance of Quality, Service, Cost and Time in shaping our customers' perception of Value.

Typical Petroleum/Chemical OPERATION



Conventional Oil Extraction

Unconventional Oil Extraction



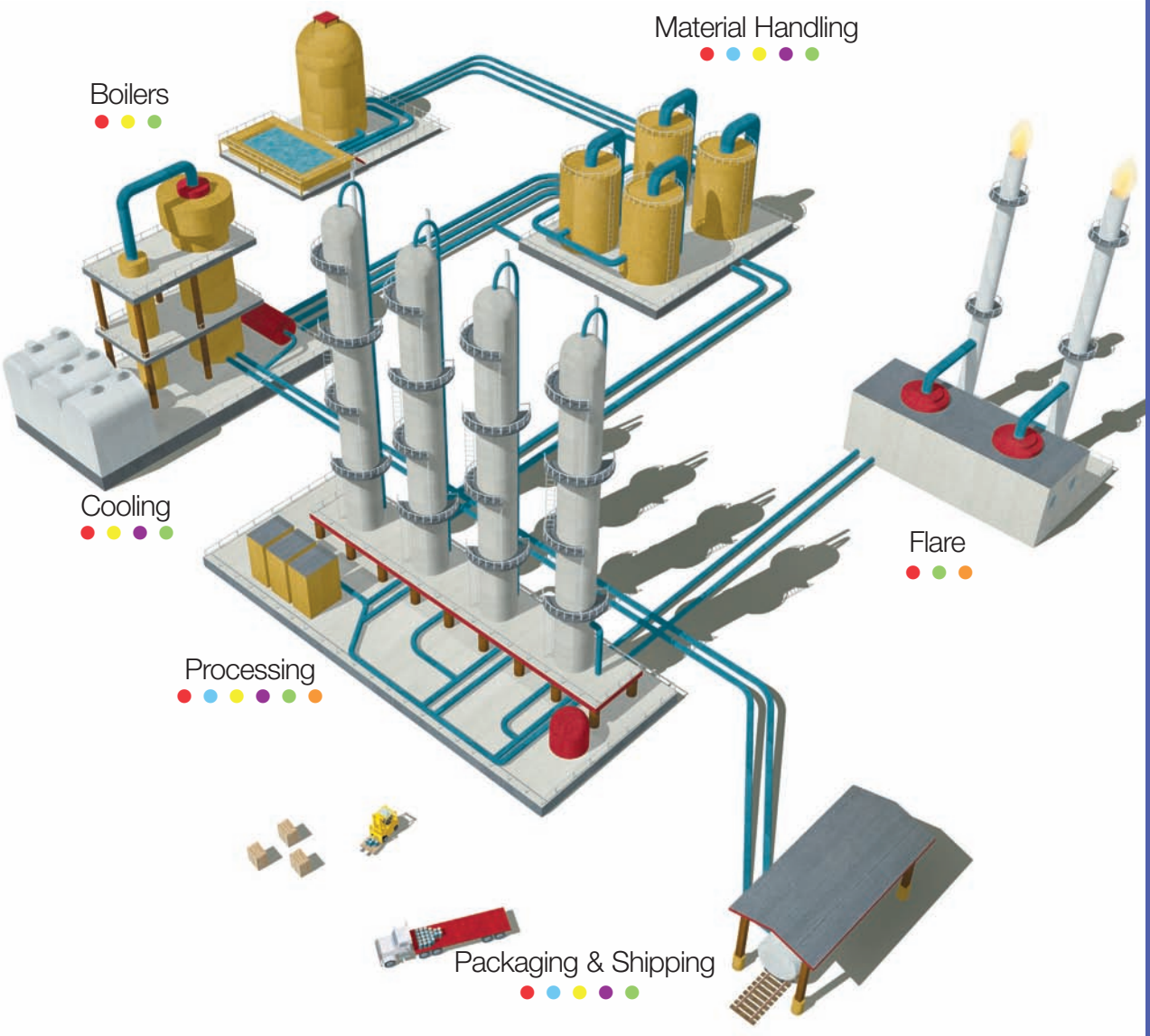
Refining

Transportation

Map Legend

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

BALDOR


Material Handling
Boilers
Cooling
Flare
Processing
Packaging & Shipping

Petroleum/Chemical Solutions from BALDOR

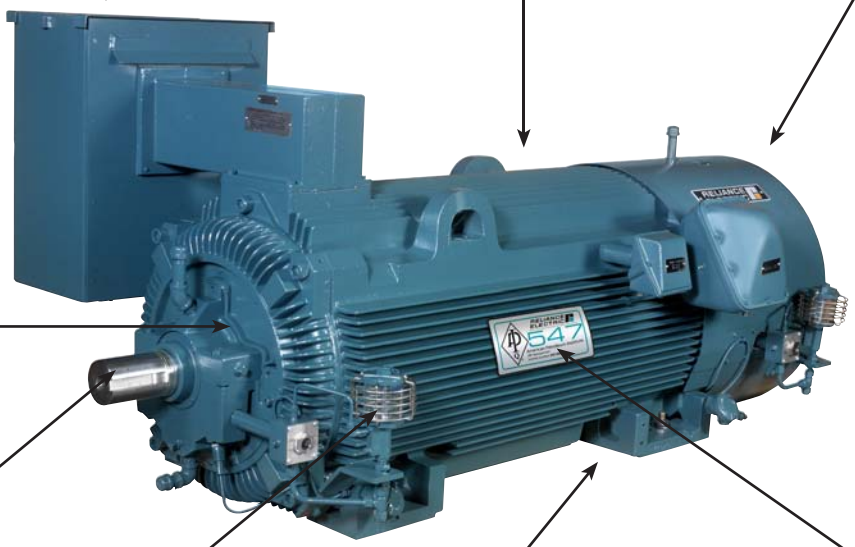
API Standard 547 Monogram® Motor

Proven SolidSeal insulation system features a two-cycle VPI process capable of passing a water immersion test.

Oversized conduit box accommodates stress cones.

Reliance's APEX paint system provides protection from corrosive elements and UV rays.

Low-noise fan and fan cover design provides 85dba operation.



Stainless-steel hardware resists rust and corrosion.

IP55 for TEFC. WPII motors have IP55 bearing protection, which provides durable performance in harsh conditions.

Constant level oilers with sight glass provide quick visual verification of proper lubrication.

API standards for foot flatness and keeping feet in same plane assures convenient installation.

Baldor•Reliance is API Monogram 001/ Licensee #1

Developed specifically for the petroleum and chemical industry, this large AC motor is easy to specify and has features that are engineered to handle severe-duty challenges.

Advanced R&D

With Baldor's Advanced Development Laboratory, PetroChem customers can benefit from a state-of-the-art facility that offers expanded research capabilities, as well as advanced development sciences. Here, R & D experts evaluate energy efficiency, materials, magnetics, insulation, vibration, and sound - all in an effort to ensure optimun performance and reliability in every application.

841XL Motor

- 1 to 500 hp (0.75-372 kW) 841XL stock motors that meet or exceed IEEE 841-2009
- 143T thru 449T Frames
- 3600, 1800 and 1200 and 900 rpm
- 200V, 230V, 400V, 460V, 575V, 50 or 60 Hz
- 841XL meets IP56
- 841XL Super-E meets 2010 EISA requirements
- 841XL Super-E meets 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
- 5 year warranty

Super-E® Liberator

- 200-1500 hp (149 to 1100 kW)
- 449T- G400J frames (TEFC)
- 05808-05812 frames (WPII)
- 3600, 1800, 1200 rpm
- 2300/4000V, 3 phase, 60 Hz
- IP55 TEFC
- Super-E models meet 2010 EISA requirements
- Severe Duty
- 3 year warranty

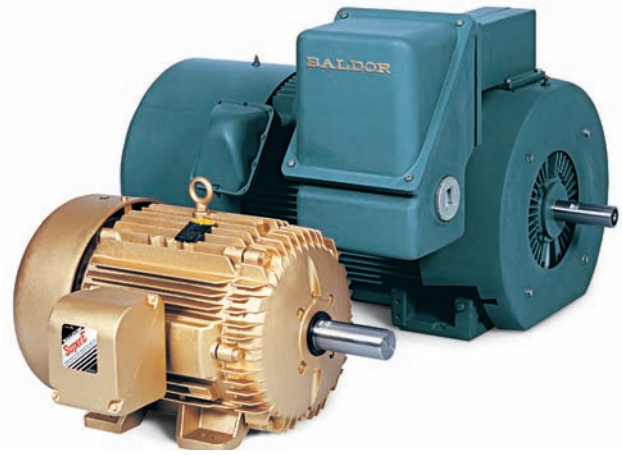
661XL Air Cooled Heat Exchanger Motor

- 5-75 hp (3 to 55 kW)
- 184T- 365T frames
- 200V, 230V, 400V, 460V, 575V, 50 or 60 Hz
- IP56 TEFC
- 661XL Super-E meets 2010 EISA requirements
- Meets IEEE 661 and meets & exceeds IEEE 841-2009
- Designed for heavy belt loads, includes drive end roller bearing
- 661XL Super-E meets 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
- 5 year warranty

API 541

- 500-15000 hp (372 to 11000 kW)
- 3 phase, 50 and 60 Hz
- 2300 to 13200V
- 5000 - 10840 frames
- TEFC, TEAAC, TEWAC, WPII, WPI, DPG designs
- Variable Speed designs
- Suitable for all critical areas

Petroleum/Chemical Solutions from BALDOR



Super-E Premium Efficient

- 1/2 - 500 hp (0.37 to 370 kW)
- 56 thru 5010 Frames
- 3600, 1800 and 1200 rpm
- 230/460V, 460V and 575V, 60 Hz, 1.15 s.f.
- 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

General Purpose Open Drip Proof (ODP) Motors

- 1/6 - 600 hp (0.12 to 450 kW)
- 48 - 5009L Frames
- Single or 3 phase, 50 or 60 Hz
- 115V, 200V, 230V, 400V, 460V, 575V and 690V
- EPAct and Super-E Premium Efficient
- Super-E models meet 2010 EISA requirements
- Foot mounted and C-face designs
- Super-E Premium Efficient motors have 3 year warranty

Super-E XEX

- 1 - 500 hp (0.75 to 370 kW)
- 143T - 449T Frames
- 230/460V, 460V and 575V, 60 Hz, 1.15 s.f.
- IP55 TEFC enclosures
- Super-E XEX meets 2010 EISA requirements
- All cast iron construction including frame, end brackets, conduit box and fan cover
- Positive Lubrication System (PLS) channels grease directly into the bearing track
- Inverter Ready
- 3 year warranty

Super-E Metric Motor

- 4 - 200 kW
- D112M - D315M Frames
- 230V - 690V , 3 phase
- IP55 TEFC enclosures
- Wye-Delta connection
- Complies with AS/NZS 1359.5.2005 High Efficiency MEPS
- Exceeds Eff 1 CENELEC; IE3
- All cast iron construction including frame, end brackets, conduit box and fan cover
- Thermistors on all 11 kW and larger

V*S Master AC Vector Motors

- Designed specifically for Inverter operation where up to 1000:1 constant torque speed range is required
- 1/2 - 300 hp (0.37 to 225 Kw)
- 56 - 449T Frames NEMA
- 200V - 690V, 3 phase
- TEFC and TENV
- Insulation system exceeds NEMA MG 1-2006, Part 31.4.4.2
- All cast iron construction including frame, end brackets
- Encoder ready
- Continuous torque to zero speed
- Optimum pole inverter duty
- Thermostats (1/phase)
- 125 hp and larger includes insulated ODE bearing

Industrial Prime/Standby Generators

- Diesel ratings from 20 kW to 2,000 kW
- LP and Natural Gas to 880 kW
- Engines include: GM, John Deere, Detroit, Mitsubishi
- Prime power, industrial standby, peak shaving

RPM AC Vector Motors

- Designed specifically for Inverter/Vector operation where up to 1000:1 constant torque speed range is required
- 1/3 - 1000 hp (0.25 to 750 Kw)
- 180 - 440 Frames NEMA, 112 - 280 Frames IEC
- 200V - 690V, 3 phase, Class H Insulation
- TEFC, TEBC and DPG-FV or IP54, IP55, IP23-IC06
- Compact square laminated steel frame with cast iron brackets
- Insulation system exceeds NEMA MG 1-2006, Part 31.4.4.2
- Encoder ready
- Continuous torque to zero speed
- Optimum pole inverter duty
- Thermostats (1/phase)
- L440 frame includes insulated ODE bearing

Towable Generators & Light Towers

- Ratings from 25 kVA to 400 kVA
- Available with or without trailer
- Diesel engines
- Mobile Light Towers
  -6000 watts total
  -(4) 1000 watt halide bulbs
  -30 foot telescoping mast

Petroleum/Chemical Solutions from BALDOR

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

AC Servo Motors

- Peak torques over 1500 lb-in (170 Nm)
- Standard or low inertia
- Potted stator – superior protection for high voltage and current spikes
- Premium 200°C moisture resistant, multi-coated wire
- Stainless steel IP67 enclosures available

Adjustable Speed Drives

- Inverter, Encoderless Vector, Vector Drive and AC Servo available
- 230 volt, 3/4 through 60 hp (0.56 to 45 kW)
- 460 volt, 3/4 through 1000 hp (0.56 to 746 kW)
- 575, volt 3/4 through 150 hp (0.56 to 112 kW)
- Graphical operator display
- PID Process control loop
- Ethernet connection option

Motion Controls

- Single and Multi-axis controls
- Digital and Analog I/O
- Available in PCI format or stand alone unit with USB and serial interfaces
- Program via Baldor's MintMT® (Multi-Tasking), embedded 'C' or ActiveX® Technologies
- Device Net, ProfibusDP, CANopen, Ethernet

Baldor 900 Series and Dodge TIGEAR®-2

- Output Ratings, 100 to 6800 lb-in (11 to 768 N-m) 1/4 to 10 hp (0.18 to 7.5 kW)
- 9 case sizes covering center distances 1.33" to 3.75"
- Mounting Configurations: Quill, 3-piece coupled or solid input
- 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

Dodge QUANTIS® Gearmotors and Reducers

- ILH Inline Helical, RHB Right Angle Helical Bevel, MSM Motorized Shaft Mount
- Output Ratings, 1/4 hp - 75 hp (0.75 to 56 kW); Up to 123,914 (lb-in) torque (14,000 N-m)
- Ratios, 1.5:1 - 300:1 + (capable of higher rations through tandem configuration)
- 8 Case sizes per housing configuration, Clamp Collar, 3-piece coupled, Integral Gearmotor, Separate Input. Solid, Straight 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
- Optional XT Harsh Duty Seal for operation in wet and dirty environments
- Class 30 Gray Iron Housings cast with internal ribbing for added strength
- Options include washdown and screw conveyor configurations

Dodge TORQUE-ARM™ II Shaft Mount Reducers

- Ratings, 3,000-325,000 lb-in (339-36725 N-m)
- 12 reducer sizes with modular accessories
- All reducers can be shaft mounted; screw conveyor, vertical, and flange mounted
- Horsepower ratings through 400 hp (298 kW)
- Standard 5, 9, 15, 25, and up to 40:1 gear ratios
- Nearly 300:1 speed reduction with V-belt drives
- Twin-tapered bushing bores: 1" through 7"
- Highly efficient helical gearing
- Meets or exceeds AGMA standards, including 5,000 hours L10 life and 25,000 average hour life
- New heavy duty lip seals for extended wear life, -40° to + 300° F
- 100% factory noise and leak tested
- New metal shield sealing system with excluder lip

Dodge Magnagear XTR

- 1 to 2000 hp (0.75 to 1491 kW), 100,000 to 920,000 lb-in torque (11,298-103,746 N-m)
- Offset parallel and right angle configurations
- Standard 8:1 through 63:1 gear ratios
- 8 case sizes
- Available with solid or hollow output shaft
- Can be direct base mounted or shaft mounted
- Highly efficient helical and planetary gearing for maximum power density
- Meets or exceeds AGMA standards, including 5000 hours L10 life
- Dual HNBR lip sealing system as standard
- Additional options include swing bases, tunnel housings and inching drives

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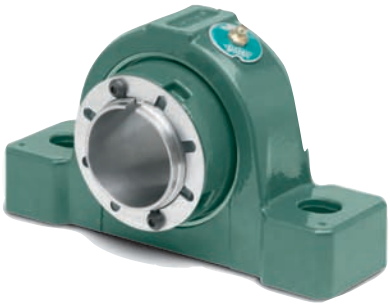
Petroleum/Chemical Solutions from BALDOR

Dodge GRIP TIGHT® Ball Bearings

- Pillow Block, two and four bolt flange, flange bracket, material handling, wide, narrow and Type G Take Up, Cylindrical, Screw conveyor hanger
- Cast Iron housing
- 1/2" to 3-1/2" bore range (17 mm-85 mm)
- Tapered sleeve, adapter mounted
- Rubber contact seal and Flinger, Labriynth "Low Torque" - shield and flinger
- Anti-Rotation Pin
- Unirex N3 Grease
- Plus or minus 2° static misalignment
- High temperature available - up to 400° fahrenheit



Dodge IMPERIAL IP Spherical Roller Bearings

- Available in 2-bolt and 4-bolt pillow blocks, flanges, and take-ups
- Cast Iron or Steel (in certain configurations) frame
- 1-1/8" to 7" bore range (80 mm-125 mm)
- Industry's only push/pull adapter mount system
- Imperial adapter system, full concentric shaft attachment with adaptor sleeve mount
- Trident triple lip or Labyrinth
- Replaceable inserts
- Field convertible between expansion & non-expansion
- Capable of withstanding static or dynamic misalignment of ± 1°

Dodge SLEEVOIL® RTL Series Hydrodynamic Pillow Block Bearings

- Plain bearing type
- Pillow block housing
- 3-7/16" to 12" bore range
- Shaft collar mounting
- Aluminum and Aux seal options
- Water/Air cooled
- Dampens vibration, quiet operation
- Fully split for ease of maintenance
- Self aligning
- Pre-drilled for accessories

Dodge Type E-XTRA® Tapered Roller Bearings

- Tapered rolling elements
- Pillow block, flange, take up housing types
- 1-3/16" to 7" bore range
- Set screw and dual collar mounting
- "R" rubbing lip seal option
- Completely assembled, factory adjusted, and properly lubricated – shaft ready
- Extra protection – E-TECT seal option
- End covers available for most sizes

Dodge PARA-FLEX®, GRID-LIGN®, GEAR, RIGID and FLUID Couplings

- 10 different types of Elastomeric and Metallic couplings
- Torque ratings up to 1,000,000 + lb-ins (113 kN-m)
- Bore sizes up to 12+ inches
- Shaft mounting available with clearance fit, interference fit, bushings (QD, TAPER-LOCK® and GRIP-TIGHT)
- Application specific couplings: spacer, flywheel, floating shaft, mill motor
- Rigid coupling for rigid mounting Dodge Magnagear to conveyor shafts
- Single/multiple delay-fill and control fill fluid couplings available

CST (Controlled Start Transmission)

- 300 to 3000 hp (224 to 2237 kW), 300,000 to 3,500,000 lb-in torque (33,895 to 395, 446 N-m)
- Offset parallel and right angle configurations
- Standard 15:1 through 38:1 gear ratio
- 7 case sizes
- Unsurpassed acceleration/deceleration control and load sharing capability
- Highly efficient planetary output gearing
- Allows starting drive motor under no load and utilization of up to breakdown torque of motor without oversizing system
- Hydroviscous clutch on output absorbs transient shocks
- Dual lip HNBR seals

Mechanical Drive Components

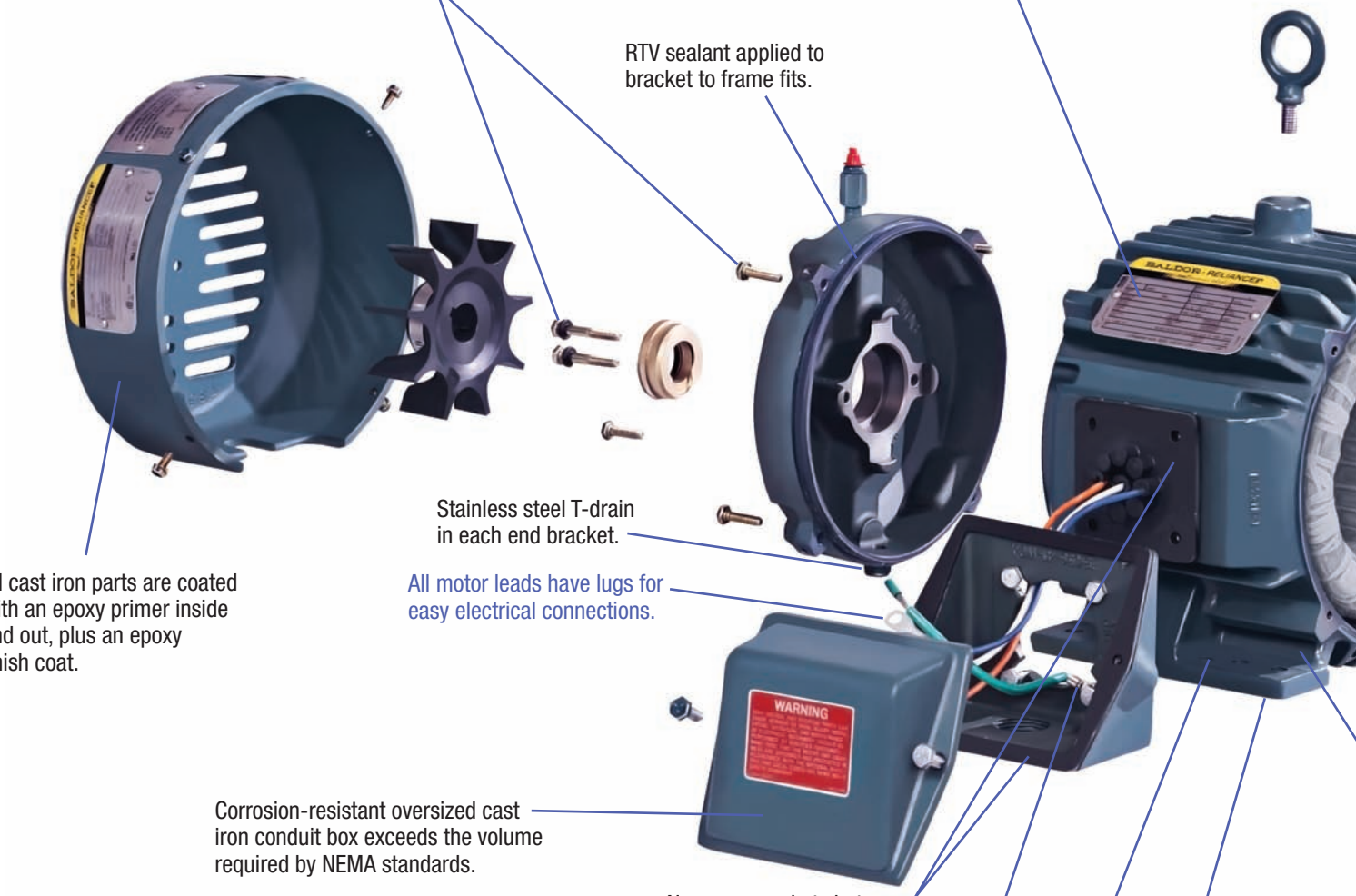
- Bushing styles in multiple belt profiles 3V, 5V, 8V, A, B, C, D, E
- Wide range of Bushing sizes
- Fixed Bore and Bushed Light Duty, Variable Pitch, Adjustable Pitch, Heavy Duty Adjustable Pitch and Step FHP Sheaves
- Synchronous Pulleys have multiple tooth profiles available including Trapezoidal, Curvilinear, Modified Curvilinear and Reinforced Parabolic
- Wide range of Classical and Narrow V-Belts, Cogged, Banded, Double V, FHP and Synchronous Belts
- Designed for harsh environments
- Made-to-Order Sheaves and Bushing capabilities

Conveyor Components

- Pulley assemblies fit CEMA dimensions and exceed the CEMA application standards by three to five times
- One-piece integral hubs eliminate welded hub heat-affected zones (HAZ)
- 360º welding of internal center disc
- Up to 1" (1/2" on wing) vulcanized 45, 60, and 70 durometer SBR and 45, 60, and 70 durometer Neoprene rubberlagged with plain and groove surfaces
- Crowned or straight face
- Vulcanized 60 durometer D-Lag with 73% more abrasion resistance than 60 durometer SBR
- MDX® (Mine Duty Extra) Wing pulleys designed for use with MDX Drum pulleys
- Rugged wing-on-drum construction incorporating 2" x 3/4" thick contact bars and 3/8" thick wings

Built for Reliable Performance

BALDOR Severe Duty Motors



PLUS...

- Documented motor performance and vibration test data shipped with motor.
- Sound power levels less than 90dBA
- Maximum shaft run-out less than NEMA standards:
  (180T-250T) frames = 0.001 inch
  (280T-440T) frames = 0.0015 inch
- Five year warranty

Features found in all Severe Duty motors

Features found only in 841XL and 661XL motors

BALDOR

High strength cast iron frame is designed to reduce vibration and assure accurate mounting dimensions.

All internal rotor, stator and shaft surfaces are epoxy coated.

841XL motors are guaranteed to meet IEEE841 vibration standards.

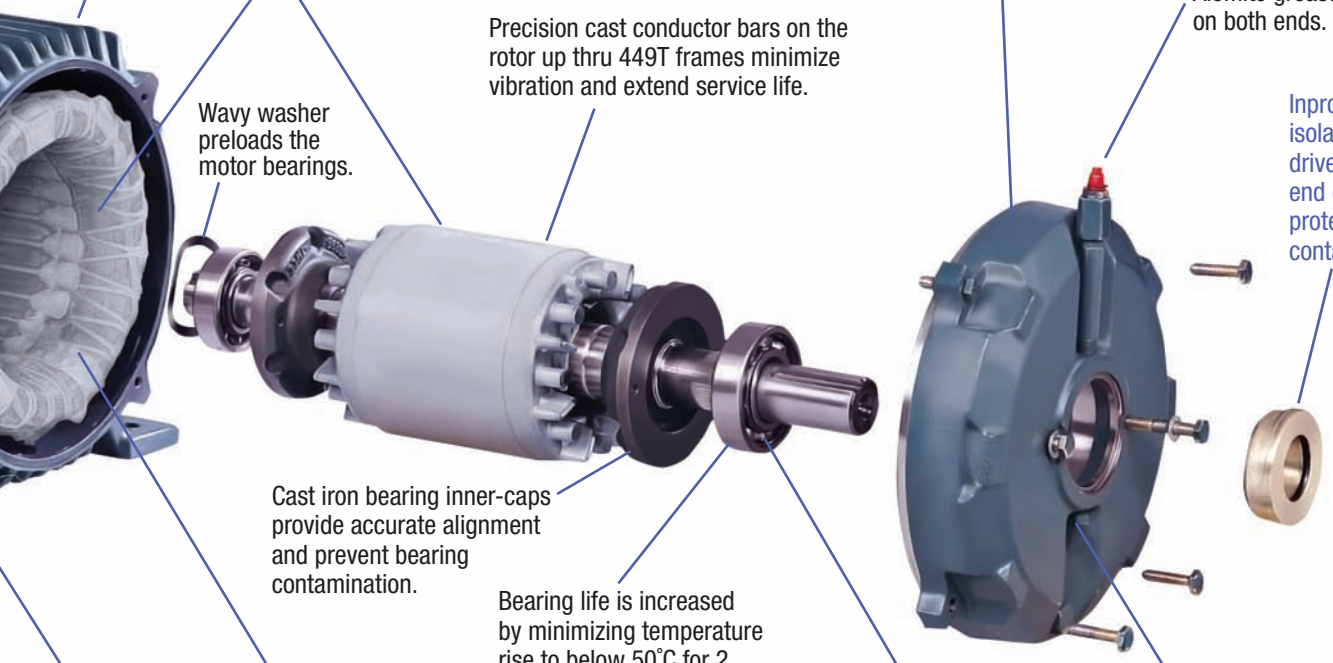
Precision cast conductor bars on the rotor up thru 449T frames minimize vibration and extend service life.

Durable cast iron end shields are machined to close tolerances for exact alignment of bearings and rotor.

Alemite grease fittings on both ends.

Wavy washer preloads the motor bearings.

Inpro/Seal™ bearing isolators at both the drive end and fan end ensure bearing protection from contamination.



Cast iron bearing inner-caps provide accurate alignment and prevent bearing contamination.

Bearing life is increased by minimizing temperature rise to below 50˚C for 2 pole motors and 45˚C for 4 pole motors.

Automatic grease relief fitting on both brackets. On ODE it extends out of the fan cover for easy access.

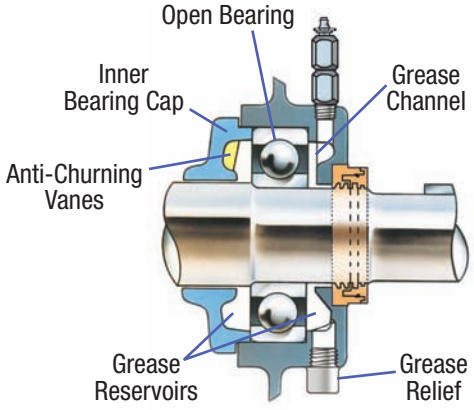
The draft angle on top of all mounting feet is 1.5 degrees or less to make proper mounting easier.

Rugged Electrical Design:

- Coil heads are laced on both ends to prevent movement.
- Stator coil dipped and baked in non-hydroscopic 100% solids epoxy varnish. Class F insulation consisting of Class F and Class H materials.
- All stator windings are tested before and after insertion into the frame to NEMA MG.1 high potential voltage standards.
- Insulation system meets the requirements of NEMA MG.1 Part 31 Section IV for VFD use and are considered inverter ready.

PLS CONSTRUCTION

Exclusive PLS® Plus (Positive Lubrication System Plus) assures proper bearing lubrication in all mounting positions. Grease is channeled directly into the bearing track. Easily accessible lubrication fittings are positioned in the front and back end shields.



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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