

# Water/Wastewater Industry



**Rural**

**Municipal**

**Industrial**

# The Industry's Most Preferred

As cities and towns continue to grow, the demand for Water and Wastewater capacity as well as the cost of energy will continue to increase. System optimization will be required to:

- Meet the Increased Demand
- Reduce overall operating costs
- Meet New EPA Regulations

The Water/Wastewater Industry faces a situation in which significant investments are needed. To minimize the impact of overall increased operating cost...rural, municipal and industrial companies need to strive to improve the overall efficiency while increasing plant reliability. Baldor has the industry experience, technical capability, tools, and products and solutions to:

- Improve Energy Efficiency
- Optimize Pumping Systems
- Improve Overall Plant Reliability

With the support of the Baldor Water/Wastewater Industry Engineering and Applications Solutions Team, Baldor offers a full line of field proven, performance driven and premium energy efficient electrical and mechanical value solutions specifically designed for the Water/Wastewater Industry. From high performance submersible motors, generators and pump drives to power transmission products, including bearings and gearing products, Baldor\*Reliance, DODGE, and Maska solutions can help improve the efficiency and performance of your application.

Baldor is dedicated to meeting the customers' needs with proven Water/Wastewater Industry expertise, problem solving products, Water/Wastewater Industry Value solutions, as well as local sales and technical support. Baldor's field support personnel are supported by the Baldor Industry Solutions engineering and application team which consists of dedicated industry specific personnel to support the customers' application needs.

At Baldor, there is a strong focus on the specific needs of the customer in each industry we serve, ensuring that our Industry Application Solutions maximize uptime and productivity while providing the lowest total cost of ownership (TCO).

**BALDOR® • RELIANCE®**

**DODGE®**

**MASKA**

**BALDOR®**

Process	Products					
	Motors	Gearing	Bearing	PT Components	Variable Speed Drives	Generators
<b>Water Operation</b>						
Screening & Pumping Station	X	X	X	X	X	X
Booster Pump	X	X	X	X	X	X
High Service Pumping	X	X	X	X	X	X
Deep Well	X	X	X	X	X	X
Influent Pumping	X	X	X	X	X	X
Disinfection	X	X	X	X	X	X
<b>Wastewater Operation</b>						
Lift Station	X	X	X	X	X	X
Main Screening & Pump Station	X	X	X	X	X	X
Primary Sedimentation Tanks	X	X	X	X	X	X
Aeration	X	X	X	X	X	X
Secondary Sludge Digestion	X	X	X	X	X	X
Sludge Digestion Tanks	X	X	X	X	X	X
Final Sedimentation	X	X	X	X	X	X
Effluent Pumping	X	X	X	X	X	X

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

**Q = Quality**  
**C = Cost**

**P = Perceived**

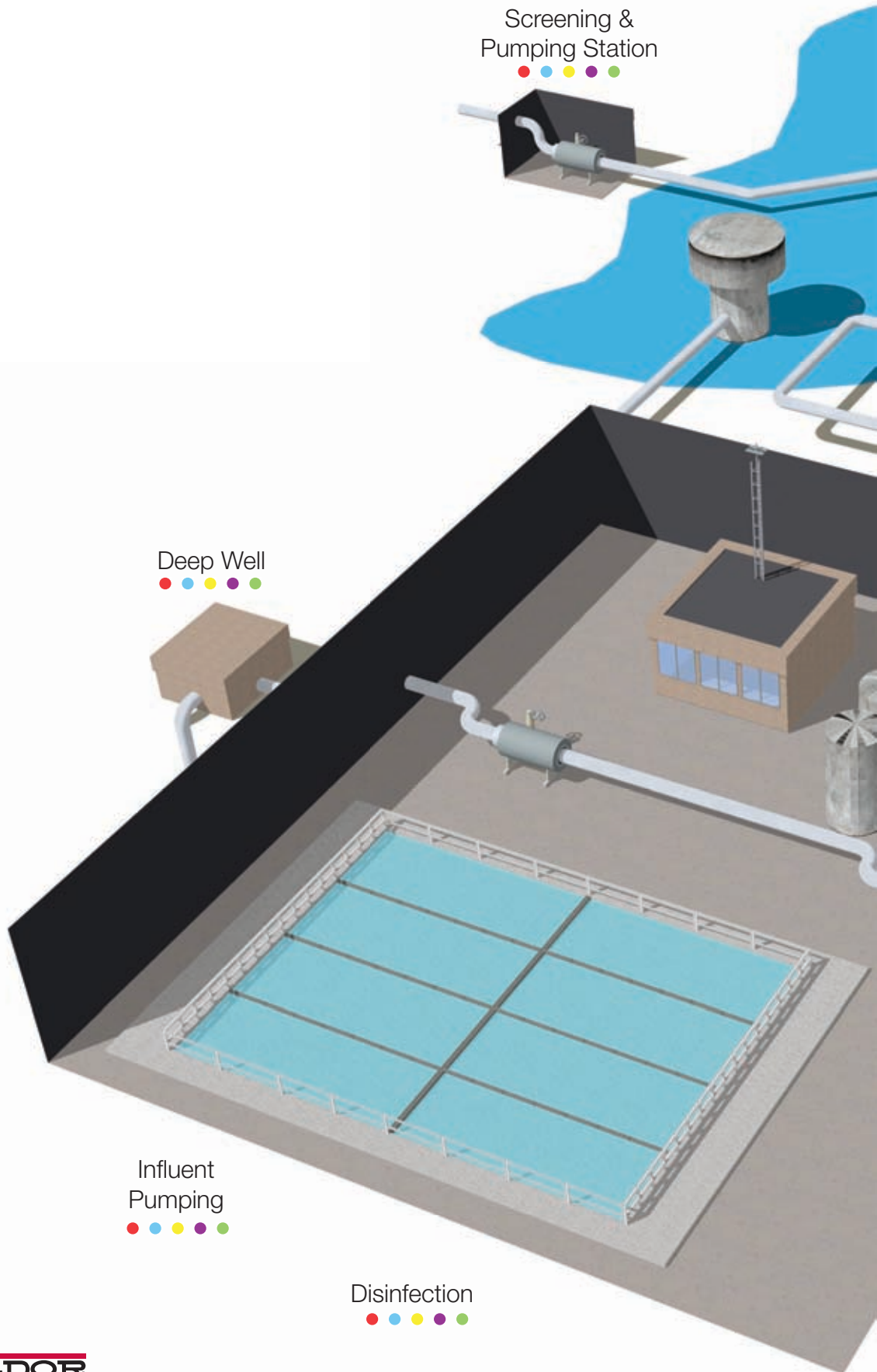
**S = Service**  
**T = Time**

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



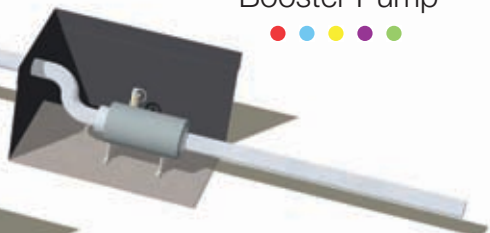
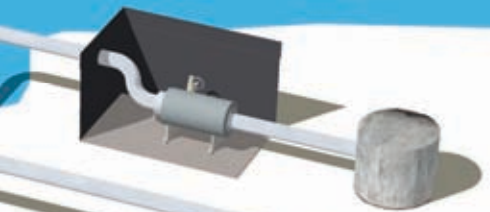
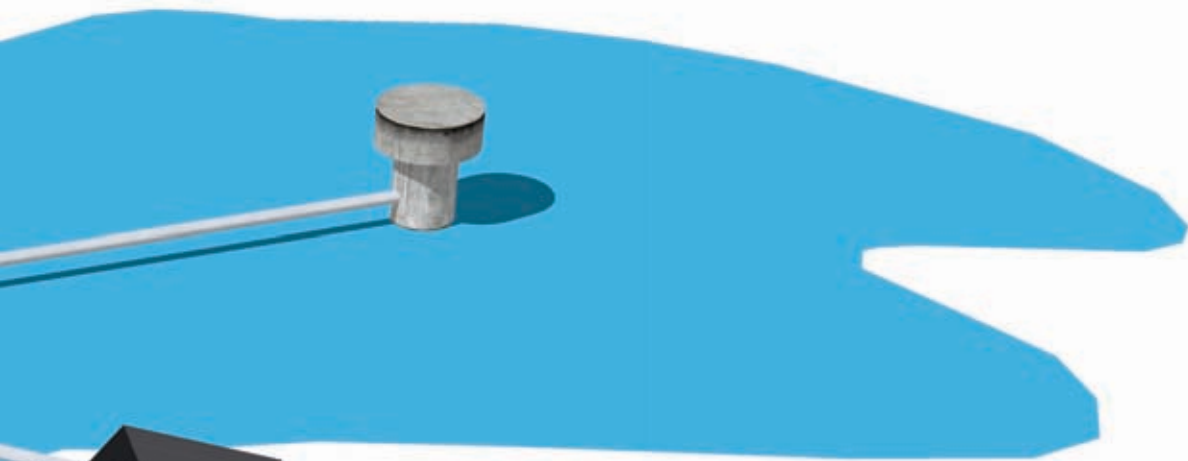
# Typical Water

## Treatment & Distribution

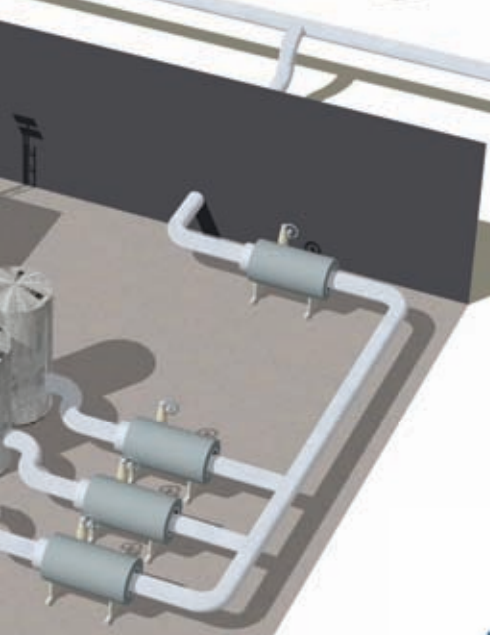


### Map Legend

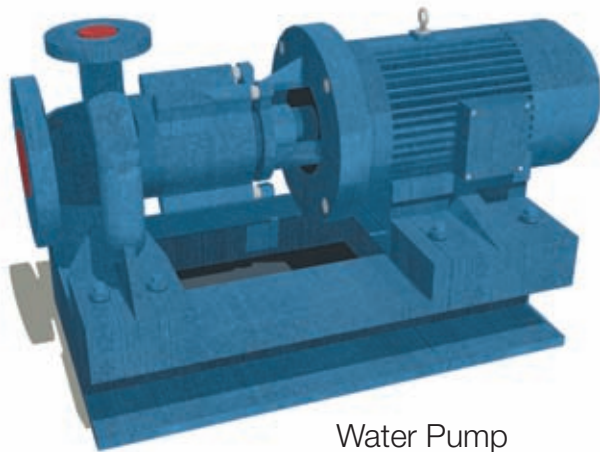
	Motors
	Gearing
	Bearings
	PT Components
	Drives
	Generators



Booster Pump

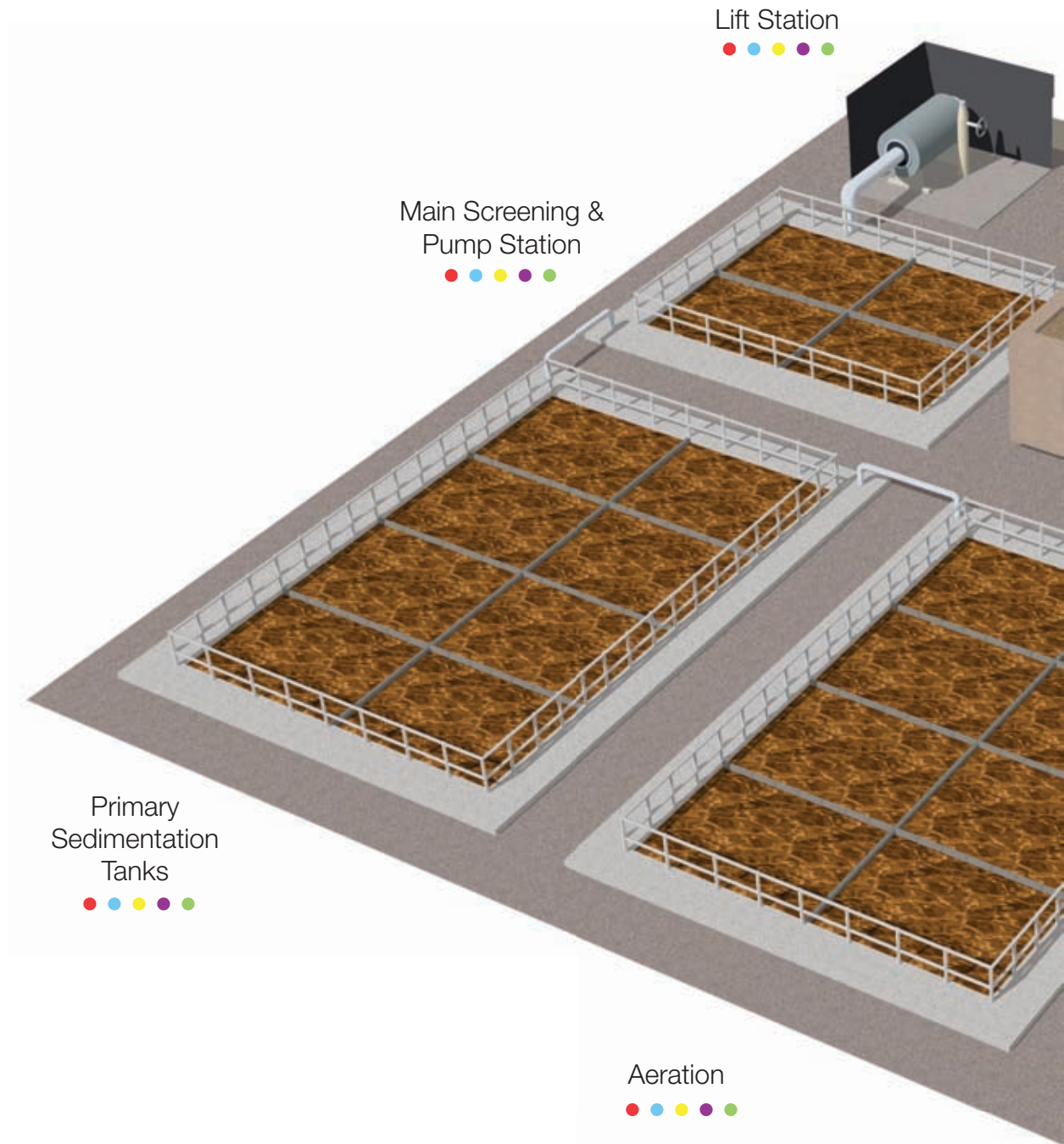


High Service Pumping



Water Pump

# Typical Wastewater Treatment & Distribution



## Map Legend

	Motors
	Gearing
	Bearings
	PT Components
	Drives
	Generators

Secondary  
Sludge Digestion



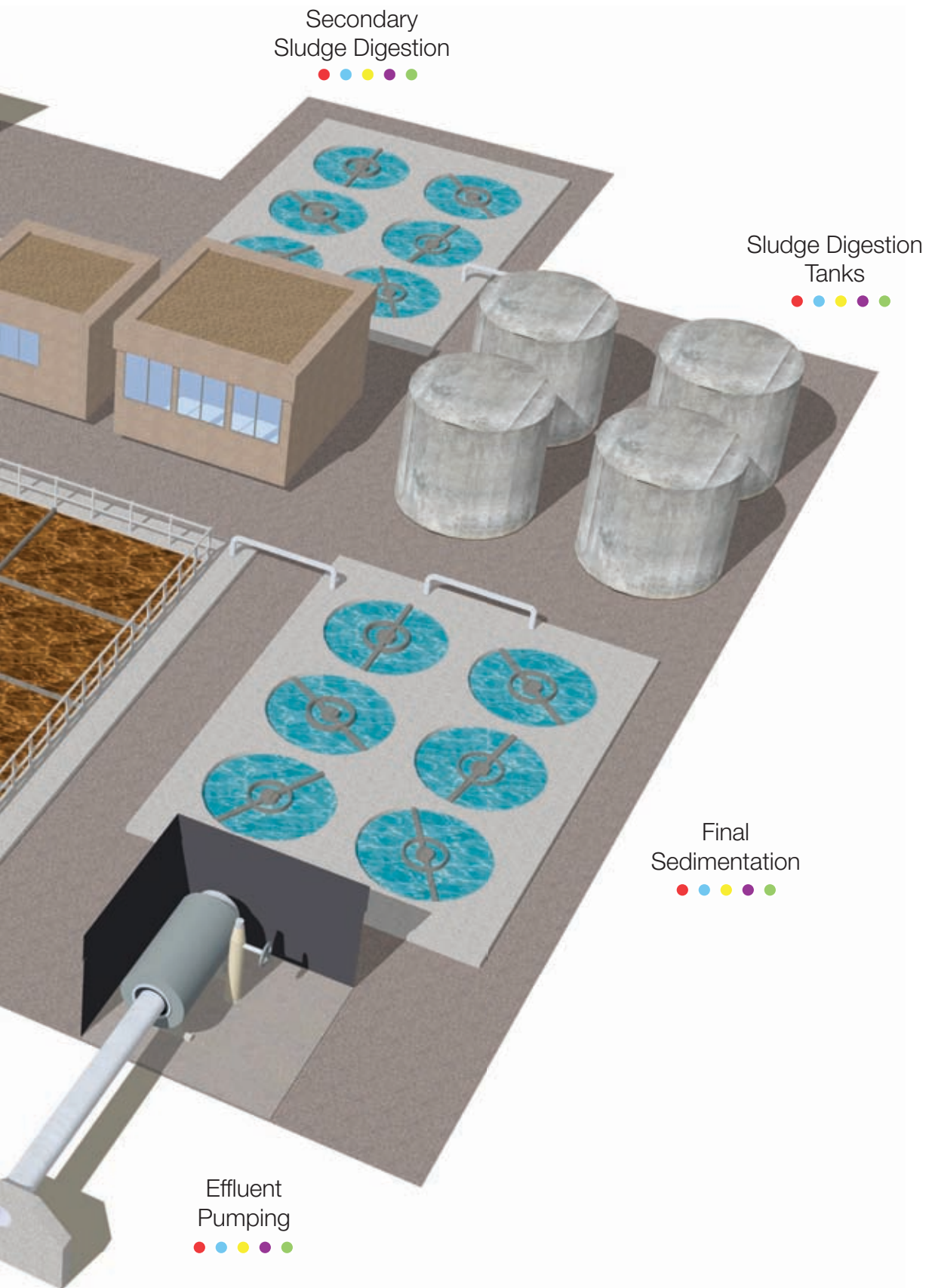
Sludge Digestion  
Tanks



Final  
Sedimentation



Effluent  
Pumping



# Water/Wastewater Solutions

from **BALDOR**



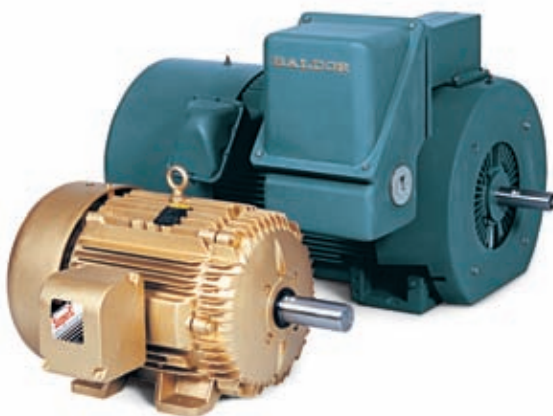
## Super-E® Liberator

- 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



## Large AC Motors

- 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



## 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



## Hazardous Location Motors – Fixed and Variable Frequency

- Division 1 / Zone 1 Class I & II
  - 1/4 - 800 hp
  - 48 - 5810 frames
- Division 2 / Zone 2 Class I & II
  - 1 - 5000 hp
  - 48 - 9500 frames
- ATEX – Zone 1 & 2
  - 1 - 300 hp
  - 112 - 400 frames (182T-449T)



### Severe Duty Motors

TEFC and TENV - Super-E® – XT/XEX – 841XL – 661XL

- 1/3 - 500 hp, IEEE: 1/2 - 250 hp
- Cast iron frames
- Inverter capable on specified models
- Standard, EPart, NEMA Premium® efficiencies
- IEEE 841 – Inpro/Seal® on fan and drive end shafts
- 1 through 400 hp stock; to 500 hp custom



### InverterDuty® Motors

V\*S Master® and Inverter Duty

- 1/3-500 hp
- 2 - 300 hp stock
- TEBC, TEFC, TENV, Division 2
- Constant torque to zero speed
- Encoder ready
- NEMA and IEC frames
- Washdown, paint free, all stainless and explosion-proof
- Inverter Gearmotors also available
- High start up torque capacity



### General Purpose ODP Motors

- Single and three phase
- 1/12 hp through 1500 hp stock; to 15,000 hp custom
- Foot and face mount
- Enclosures: ODP, WPI, WPPI
- Low and medium voltage including 200 through 575V



### Subfractional Gearmotors

- AC and DC ratings
- Right angle and parallel shaft 1/50 through 1/2 hp
- Enclosures: TENV and TEFC

### Inverter Gearmotors

- 230 volt 3/8 hp
- Right angle 490 RPM @ 68 lb-in through 33 RPM @ 315 lb-in
- Parallel shaft 490 RPM @ 58 lb-in through 82 RPM @ 350 lb-in



### General Purpose Totally Enclosed Fan Cooled Motors

- Three phase
- 1/4 hp through 800 hp stock, to 2250 hp custom
- Enclosures: TEFC
- Foot and face mount
- Inverter-Ready
- Low voltage including 200V through 575V
- Medium voltage

# Water/Wastewater Solutions

from **BALDOR**



## Submersible Motors - Explosion Proof, Division 1 Groups C & D

- 1 - 450 hp
- 3600, 1800, 1200, 900, 720, 600 RPM
- 180TY to 440TY frames
- Vertical, flange mounted
- All cast iron construction
- Designed to run continuously submerged in water/sewage or continuous in air
- Inverter capable



## Brake Motors

- Single phase 1/4 - 1 hp stock
- Three phase 1/4 - 30 hp stock
- Super-E® NEMA Premium
- Washdown duty
- Explosion proof
- Short series brake motors with integral Dodge brake
- TENV/TEFC motors with Dodge D-series brakes 1/2 - 10 hp



## All-Stainless Washdown Duty Motors

- Three phase
- 1/2 hp through 20 hp stock
- Enclosures: TEFC and TENV
- C-Face with or without base
- Labyrinth seals
- Standard and Super-E® Efficiency
- IEC Ratings Available



## Inverter/Vector Duty Washdown Motors

- 230/460 volts
- Inverter Duty washdown, 1 through 10 hp stock
- Inverter Duty paint free, 1 through 10 hp stock
- Vector Duty washdown, 1 through 10 hp stock
- Enclosure: TENV and TEFC
- C-Face with base



## Adjustable Speed Drives

- Inverter, Encoderless  
Vector, Vector Drive and AC Servo available
- 230 volt, 3/4 through 60 hp
- 460 volt, 3/4 through 1000 hp
- 575, volt 3/4 through 150 hp
- Graphical operator display
- PID Process control loop
- Ethernet connection option
- Feedback control



### 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 ratios 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



### 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



### 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



### Motorized TORQUE-ARM® II

- Heavy Duty AGMA rated design
- Tapered roller bearings on all helical shafts
- Premium HNBR oil seals
- Reduced assembly time
- Reduced guarding costs
- Reduced maintenance requirements
- Two motor speeds and multiple gear ratios provide a wide spectrum of output speeds
- Standard and short shaft twin-tapered bushings
- Industry leading backstop design
- Rugged, high efficiency, case carburized helical/bevel gearing
- AGMA output torque ratings up to 15,000 in-lbs (1,700 Nm)

# Water/Wastewater Solutions

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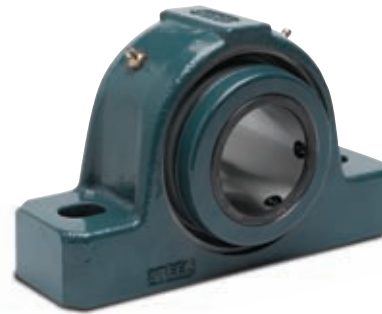
## GRIP TIGHT® Bearings

- 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 "Low 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



## SPECIAL DUTY Bearings

- Quality Duplex Tapered Roller Bearing
- Tempered Adapter Sleeve Mounting
- Effective Piston Ring Seals
- Rugged Two-Piece Housing
- Elongated Bolt Holes



## S-2000 Dodge HD Bearings

- Setscrew shaft mount
- Multiple steel housing designs
- Replaceable inserts
- Choice of triple lip or labyrinth seals
- Expansion/non-expansion convertible
- Housings designed for harshest applications
- Quick and simple installation
- Easy insert replacement
- Economical



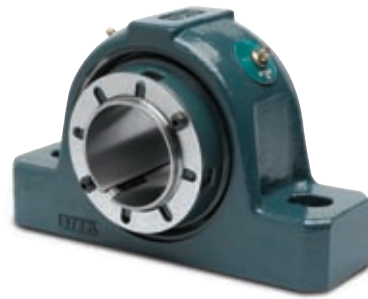
## USAF Bearings

- Drop-in, Triple-Tect Seal
- Excellent seal for wet or dirty environments
- Housing base is threaded to accept four Grade 5 cap bolts for added strength
- Cap bolts match base bolts for one-wrench installation
- Standard housings have two oversized drains adaptable to circulation oil systems
- Pry slots allow easy separation of the pillow block



### 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



### IMPERIAL HD Bearings

- Patented adapter mounting system
- Multiple steel housing designs
- Replaceable inserts
- Choice of triple lip or labyrinth seals
- Expansion/non-expansion convertible
- Housings designed for harshest applications
- Easier to install/remove than conventional adapters



### IMPERIAL® IP Spherical Roller Bearings

Imperial IP (English Units)

Imperial ISN (Metric Units)

- Industry's only push/pull adapter mount system
- Available in 2-bolt and 4-bolt pillow blocks, flanges, and take-ups
- Accepts commercial tolerance shafting
- Full concentric shaft attachment with adaptor sleeve mount
- Virtually eliminates fretting corrosion
- Capable of withstanding static or dynamic misalignment of  $\pm 1^\circ$
- Installation and removal in less than 15 minutes
- High temperature available – up to 400° F



### System-1

- System-1 packages utilize Baldor•Reliance and Dodge products
- Optimized design and product selection of all Baldor products
- Competitive solutions with package pricing
- Pre-assembled packages for ease of installation
- Project coordination to final destination

# Water/Wastewater Solutions

from **BALDOR**



## 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



## 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
- Single/multiple delay-fill and control fill fluid couplings available



## 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



## 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



### **Industry Solutions Engineering**

- Water/Wastewater Specialists
- Fluid and Air Handling Specialists (Flow modeling)
- Bulk Material Handling/Conveyor Specialists
- Total System Solutions
- Equipment Specifications
- Failure Analysis



### **Advanced Research & Development**

With Baldor's Advanced Development Laboratory, Water/Wastewater 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 optimum performance and reliability in every application.

# MISSION

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**“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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**BALDOR®**

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