

# Paper & Forest Products Industry



**BALDOR**<sup>®</sup>

# The Industry's Most Preferred

As the need for Paper and Forest Products increases throughout the world, producers are faced with the challenge of continuous productivity improvement. Now more than ever, it is crucial for your operation to run efficiently and reliably in order to remain competitive and profitable.

Baldor Electric Company offers Paper & Forest Products Industry users a total solution for their electric motor and power transmission product needs. From heavy duty industrial motors, mechanical power transmission products, drives and generators, Baldor•Reliance and Dodge products can help you with your application. Our products are engineered with industry-driven designs and patented technology that provide greater uptime with less maintenance. Baldor•Reliance and Dodge brands are at work all over the globe in environmental conditions that include everything from wind, dust and snow to extreme temperatures including tropical. Wherever the application, our extensive stock product lines are backed up by many years in custom-engineered solutions. This kind of flexibility allows Baldor to meet the individual needs of any Paper & Forest Products Industry application, anytime...anywhere.

**BALDOR® • RELIANCE®**

**DODGE®**

**MASKA**

**BALDOR®**

Process	Products						
	Motors	Gearing	Bearings	PT Components	Variable Speed Drives	Servo Motors & Drives	Generators
Pulp	x	x	x	x	x	x	x
Paper	x	x	x	x	x	x	x
OSB	x	x	x	x	x	x	x
Plywood	x	x	x	x	x	x	x
MDF	x	x	x	x	x	x	x
Sawmill	x	x	x	x	x	x	x

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

Q = Quality  
C = Cost

P = Perceived

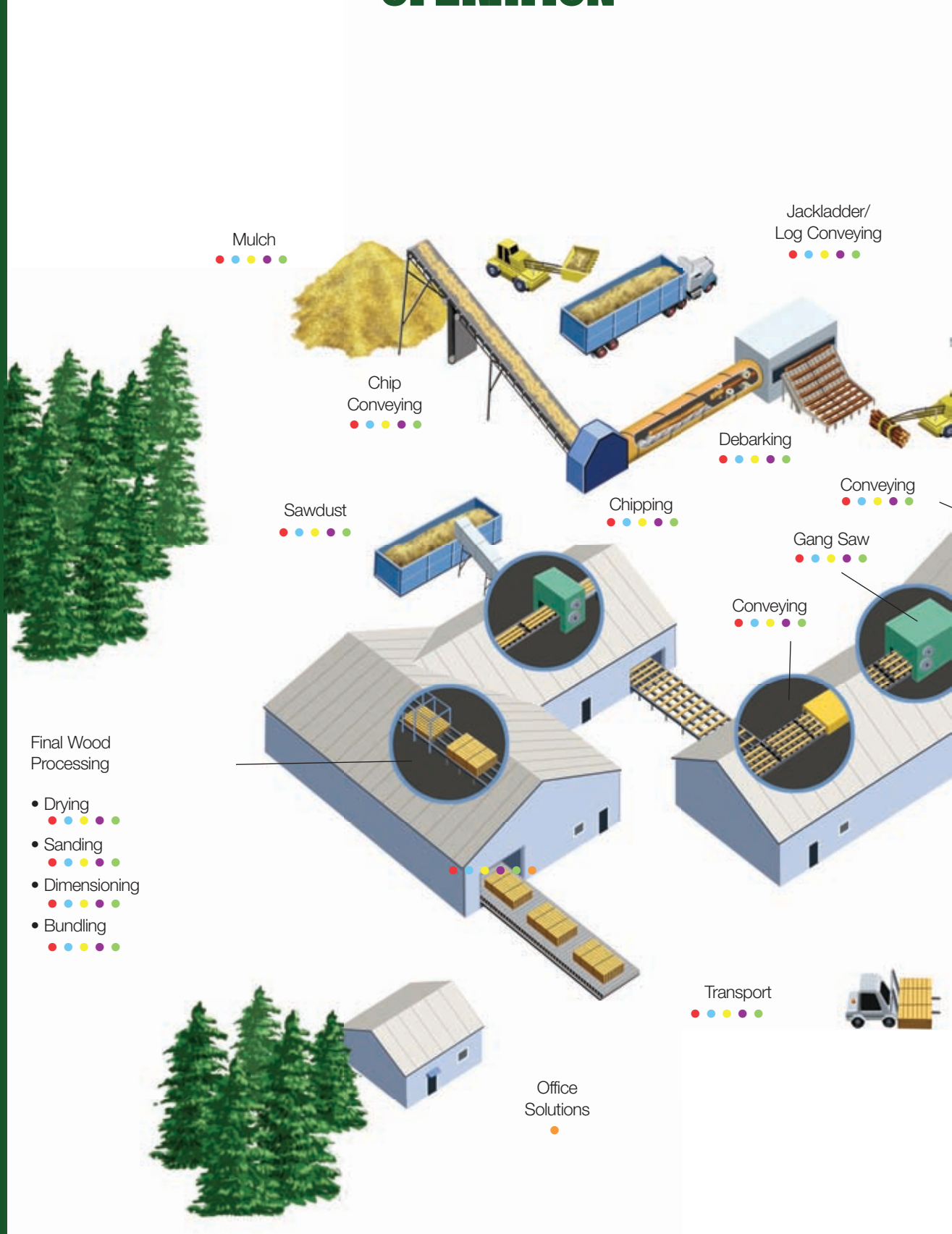
S = Service  
T = Time

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



# Typical Sawmill

## OPERATION



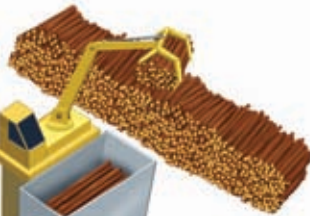
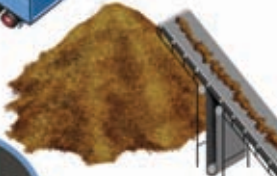
### Map Legend

	Motors
	Gearing
	Bearings
	PT Components
	Drives
	Generators

Wood Yard Crane



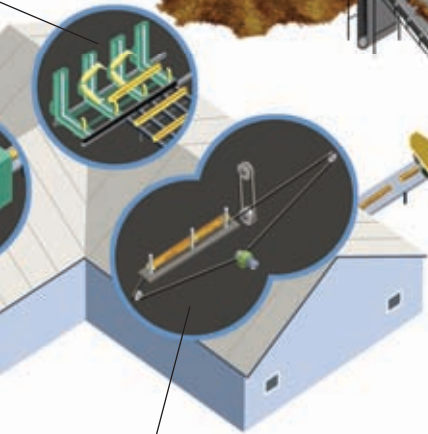
Bark Mulch



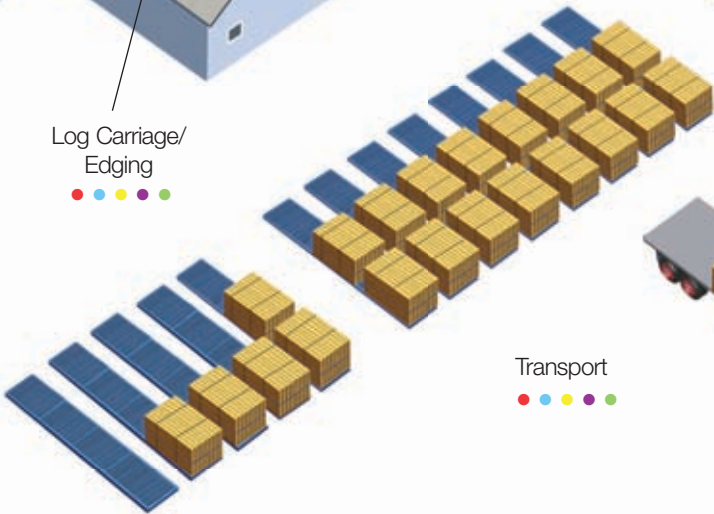
Debarking



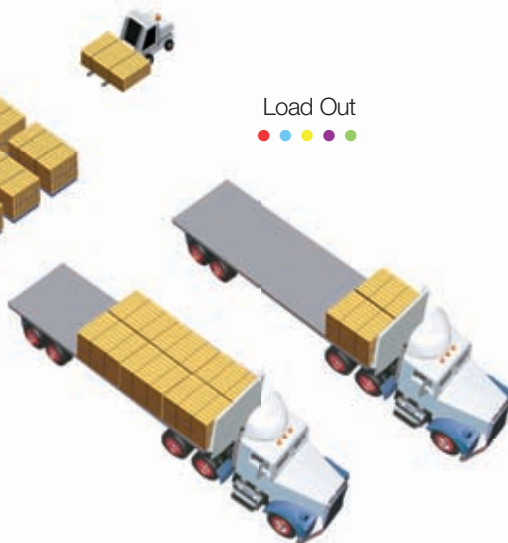
Cut Off Saw



Log Carriage/  
Edging



Load Out

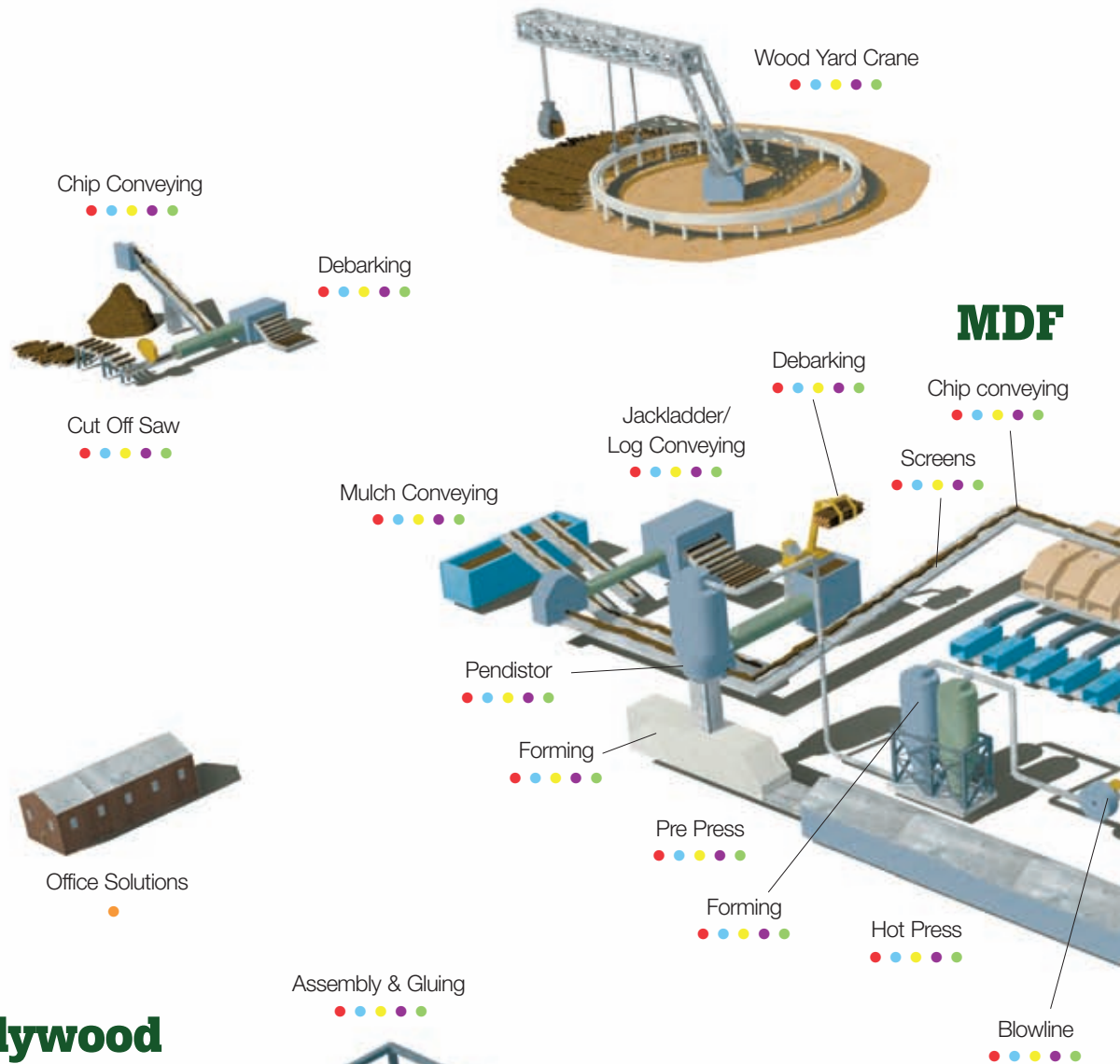


Transport

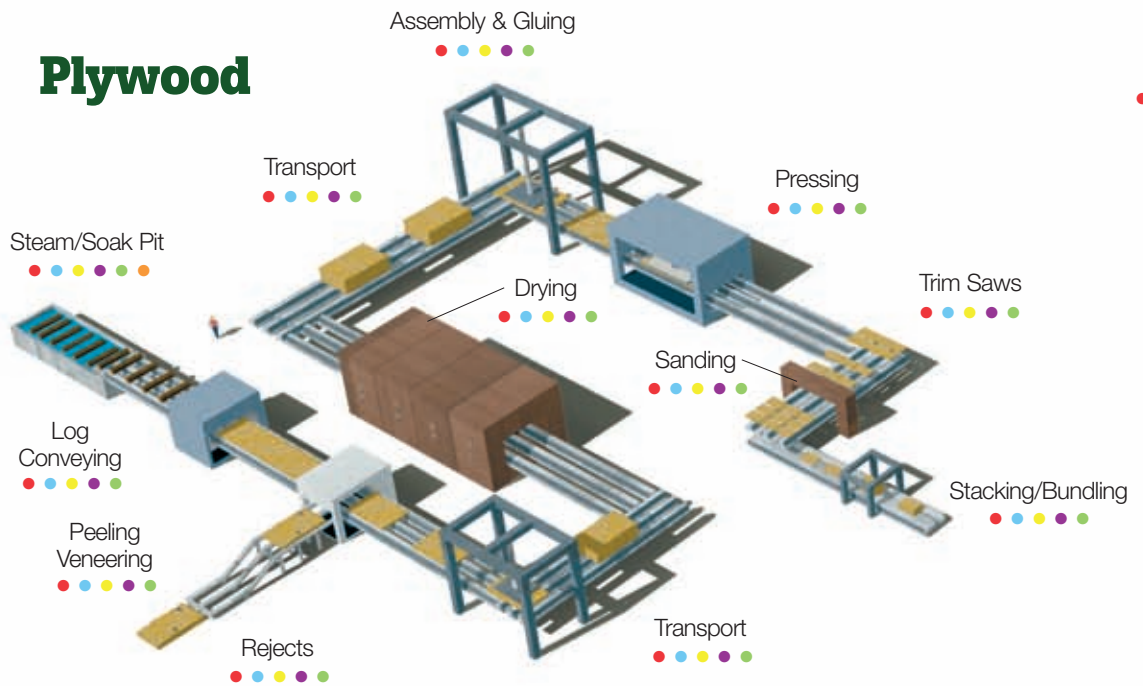


# Typical MDF/OSB/Plywood Mill

## OPERATION



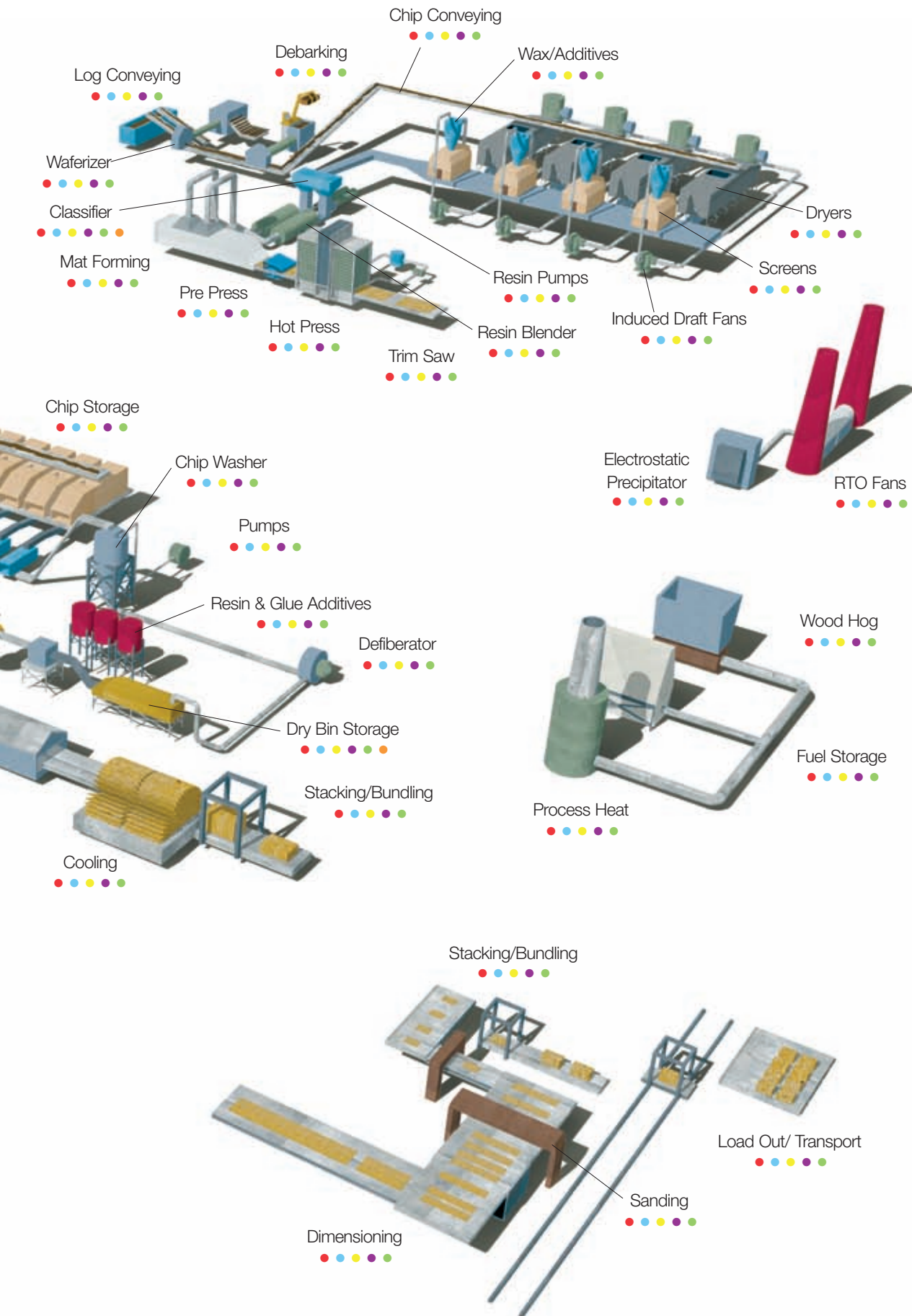
## Plywood



### Map Legend

	Motors
	Gearing
	Bearings
	PT Components
	Drives
	Generators

# OSB



# Typical Pulp Mill

## OPERATION

Chip Conveying



Log Conveying



Debarking



Chipping



Induced Draft Fans



Pulp Process



### PULP MACHINE

Cutting



Forming



Drying



Baling



Transport



Office Solutions



### Map Legend

	Motors
	Gearing
	Bearings
	PT Components
	Drives
	Generators



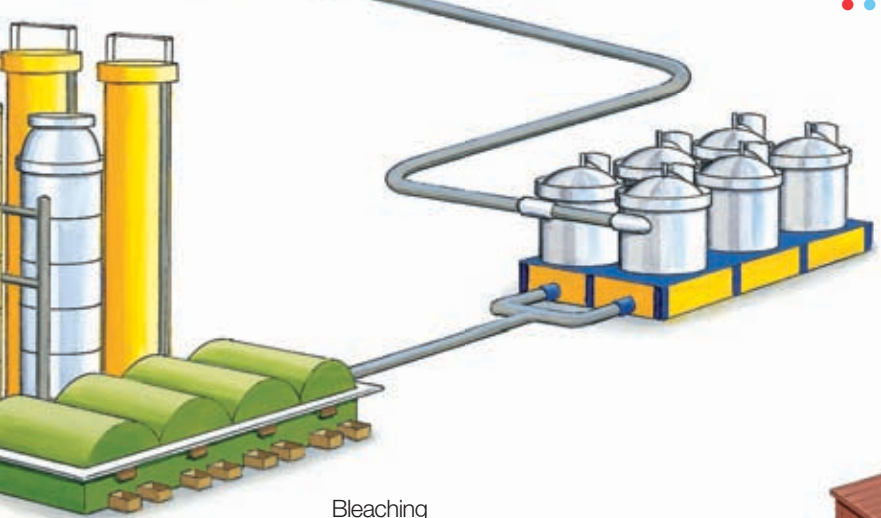


Digesting  
● ● ● ● ●

Wood Yard  
● ● ● ● ●



Water/Wastewater  
● ● ● ● ●



Bleaching  
● ● ● ● ●

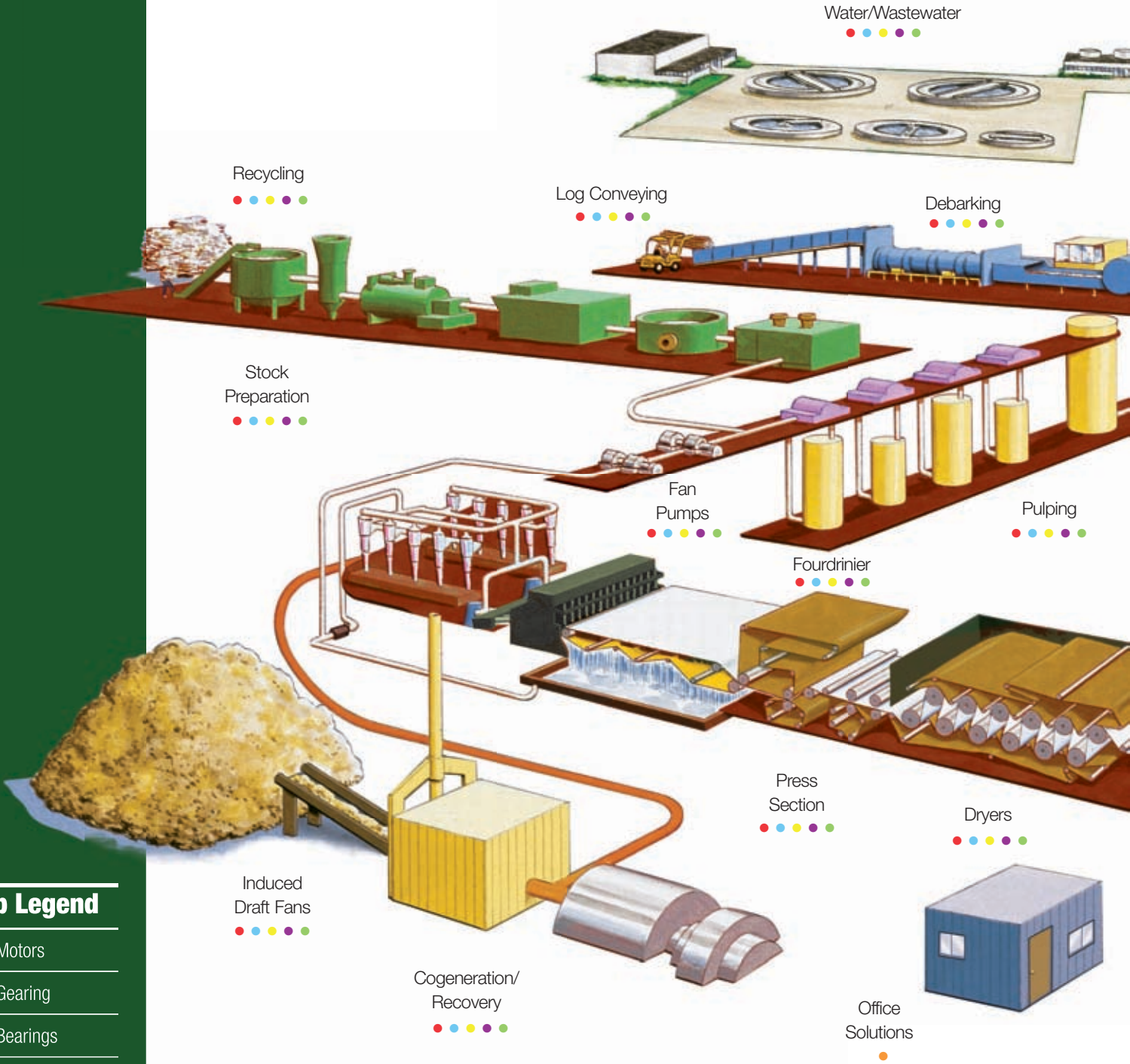
Screens & Washers  
● ● ● ● ●



Load Out  
● ● ● ● ●

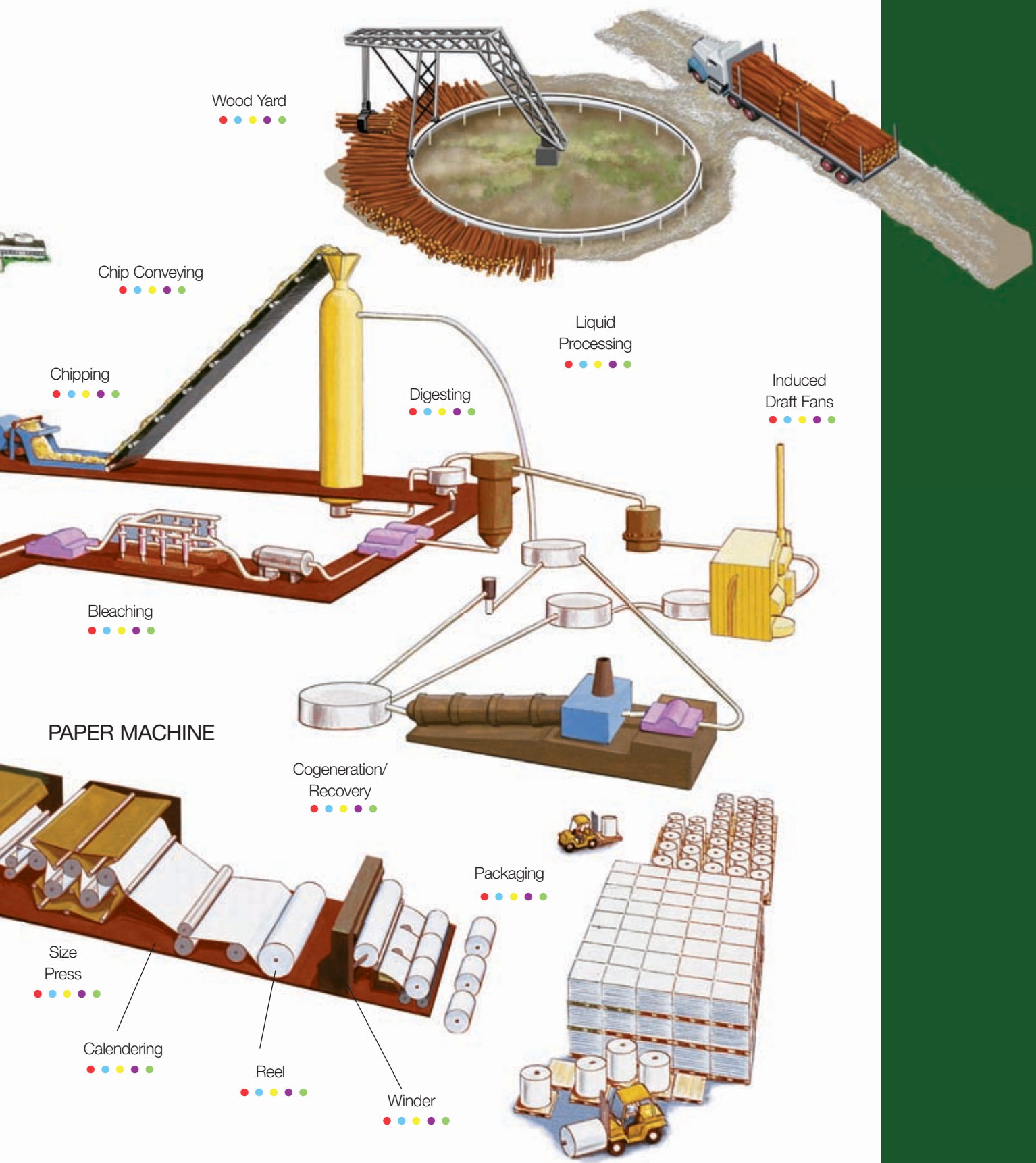
# Typical Paper Mill

## OPERATION



### Map Legend

	Motors
	Gearing
	Bearings
	PT Components
	Drives
	Generators



# Paper and Forest Products

from **BALDOR**



## Super E Premium Efficient Motors

- NEMA Premium®, IE3, EFF1, and IEC efficiencies
- Single and three Phase
- 1/4 hp through 500 hp (0.18 - 370 kW)
- 230, 460, 575 V & 50 Hz available from stock
- 380, 400, 415 v available
- Enclosures: TEFC, TENV, ODP
- Foot and face mount
- NEMA and IEC low and medium voltage
- Explosion Proof motors



## Brake Motors

- Single phase 1/4 - 1 hp stock (0.18 - 0.746 kW)
- Three phase 1/4 - 30 hp stock (0.18 - 22 kW)
- 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



## Severe Duty Motors

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

- 1/3 - 500 hp, IEEE: 1/2 - 250 hp (0.37-187kW)
- Cast iron, NEMA and IEC frames
- Inverter capable
- EPAAct, EFF1, NEMA Premium® efficiencies
- IEEE 841 – Inpro/Seal® on fan and drive end shafts
- 1 through 400 hp stock; to 500 hp custom
- 460, 575 V & 50 Hz available from stock
- 380, 400, 415 v available
- Meets Paper and Forest Product Industry standards



## Large AC Motors

- 250 through 15,000 hp (187 - 11,190 kW)
- NEMA or IEC specifications
- 460 through 13,800 volts
- API 541 or 547 available
- Anti-friction or sleeve bearings
- Through 1,500 hp (1120 kW) stock
- TEFC, ODP, WPI, WPII Enclosures
- Meets Paper and Forest Product Industry standards



### InverterDuty® and Vector Duty® Motors

V\*S Master® and Inverter Duty

- 1/3 - 300 hp stock (0.25 - 224 kW)
- TEBC, TEFC, TENV
- Continuous constant torque to zero speed
- Encoder ready on Inverter Duty, encoder mounted on Vector Duty
- NEMA and IEC frames
- Washdown, paint free, all stainless and explosion-proof
- Inverter Gearmotors also available
- Severe Duty Vector Motors in stock 1-50 hp (.746 - 37 kw)
- Meets Paper and Forest Product Industry standards
- 1000 : 1 CT
- Winder Duty



### Magnagear XTR

- Parallel shaft or right angle configurations available
- Torque capacities from 285,000 to 920,000 lb-in (32 to 104 kN-m) available(1)
- Global product design to fit all markets
- Multiple mounting configurations available (Base Mounting, Swing Base Mounting, Tunnel Housings)

(1) Contact Baldor with requests for torque requirements exceeding 920,000 lb-in.



### RPM AC Inverter Duty / Vector Duty Motors

- 1/3 through 1,000 hp stock (.25 - 746 kW)
- TEFC, TENV, TEBC, DPG-FV, Division 2/Zone 2
- Continuous constant torque to zero speed
- Encoder ready on Inverter, encoder mounted on Vector
- NEMA and IEC frames
- Compact, power dense, low inertia designs
- Extruder duty DPG-FV
- Encoder and stub shaft kits available
- Laminated steel frame construction
- Functional DC Motor Replacement
- Induction and PM designs
- Paper Mill Duty Features
- High vibration – press duty features
- 1000 : 1 CT
- Winder Duty



### 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

# Paper and Forest Products

## from BALDOR



### Linear Motors

- Very high acceleration – up to 10 g's (9.8 m/s<sup>2</sup>)
- High speeds to 320 in/sec (8 m/s)
- High peak forces to 3100 lbs (13,800 N)
- Extremely low backlash, high stiffness
- Positioning to 50 Nm



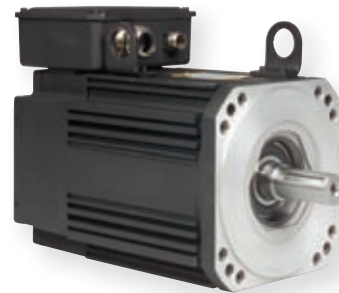
### AC Servo Motors

- 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



### Motion Controls

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



### Brushless Servo BSM132 Series

- Higher power, higher torque for demanding industrial applications
- Premium grease proven to provide four times longer life
- Double insulated wire with premium 200°C moisture resistant and multi-coated for superior protection
- Quality servo rated ball bearings for durability
- High energy magnets providing high dynamic performance
- Motor sealing provides up to IP65 protection



### 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



### RPM III DC Motors

- 90 years of leading DC Motor Technology and Design
- Unique laminated square frame for superior performance
- Premium insulation materials
- Exclusive PLS Positive Lubrication System for longer bearing life
- Wide range of motor enclosures to meet application requirements
- IEC Designs
- Paper and Forest duty features
- 1.5 - 500 hp stock (1.1 - 370 kW);  
1 thru 3000 hp (.746 - 2238 kW) custom
- Stock and custom designs
- Enclosures: TENV, TEFC, DPGF, DPBV, TEUC and TEAO



### 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



### 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

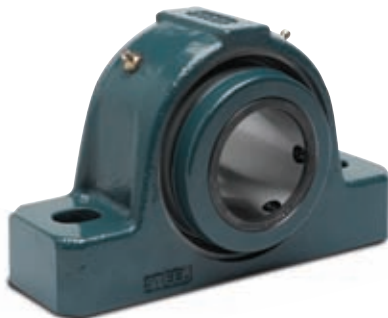
# Paper and Forest Products

from **BALDOR**



## Grip Tight® Ball Bearings

- Normal duty GT and medium duty GTM
- Single-lip contact seal with flingers standard
- Interchangeable mounting dimensions
- 360° full shaft contact and concentricity
- Anti-rotation device prevents insert rotation
- Plus or minus 2° static misalignment
- Pillow Block, Tapped Base, 2, 3, 4 bolt flange, piloted flange and take up mounting
- High temperature available – up to 400° F
- Patented tapered adapter sleeve mounting



## 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



## 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



## USAF Bearings

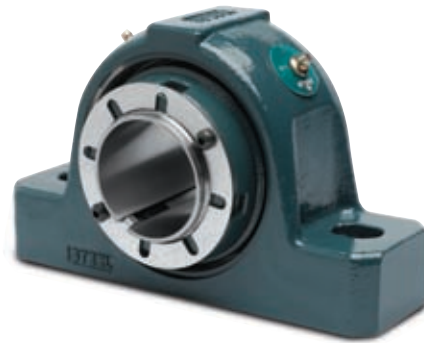
- Drop-in, Triple-Tect Seal
- Excellent seal for wet or dirty environments
- Housing base is threaded to accept four Grade 5 cap bolts for added strength
- Cap bolts match base bolts for one-wrench installation
- Standard housings have two oversized drains adaptable to circulation oil systems
- Pry slots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





### **SPECIAL DUTY Bearings**

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



### **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



### **Type E Tapered Roller Bearings (E-XTRA®)**

- Tapered rolling elements
- Completely assembled, factory adjusted, and properly lubricated – shaft ready
- Extra protection – E-TECT seal option
- Comparable mounting dimensions with ball bearings
- E-XTRA allows easy upgrade from ball bearings



### **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

# Paper and Forest Products

from **BALDOR**



## 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)



## TIGEAR®-2 Speed Reducers

- Single-worm with quill, separate or 3-piece coupled input, cast iron construction
- Totally enclosed, maintenance free, ventless
- 10 case sizes 1.33" to 4.75" center distances
- 5:1 to 60:1 reductions, solid or hollow output
- GRIP TIGHT® bushing system available
- E-Z KLEEN® and stainless steel design available
- Factory filled with synthetic lubricant
- Premium 316 stainless steel housings



## QUANTIS® ILH, MSM and RHB C-Face Reducers/Integral Gearmotors

- 8 sizes
- Fractional hp to 75 hp
- Ratios: 1.41 to 359.30
- Up to 123,919 (in-lb) torque
- Mounting flexibility
- Direct coupled
- Forest Products Duty Output Seal
- 95% Efficient



## TORQUE-ARM™ II Shaft Mount Reducers

- 12 new reducer sizes with modular accessories
- All reducers can be shaft mounted: screw conveyor, vertical, and flange mounted
- Horsepower ratings through 400 hp
- Torque ratings through 500,000 lb-in
- 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
- AGMA output torque ratings up to 500,000 in-lbs (56,500 Nm)



### 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



### 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)
- 360° 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 rubber lagged with plain and groove surfaces
- Vulcanized 60 durometer D-Lag with 73% more abrasion resistance than 60 durometer SBR
- Crowned or straight face
- MDX 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



### PARA-FLEX®, D-FLEX® and GRID-LIGN® Couplings

- DODGE offers 10 different types of Elastomeric and Metallic couplings
- Torque ratings ranging up to 1,000,000 + lb-ins
- 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



### Advanced Research & Development

With Baldor's Advanced Development Laboratory, Paper and Forest 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.



### Industry Solutions Engineering

- Pulp, Paper, OSB, MDF, Sawmill, Plywood, Tissue and Gypsum Board specialists
- Fluid handling, Material handling and Air handling specialists
- Conveyor Solutions Analysis
- Reduced Total Cost of Ownership (TCO) Industry Application Solutions

# 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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