

### Sumitomo Drive Technologies

A global power transmission solutions provider. With facilities strategically located throughout the world, providing comprehensive products and services in your region.

#### Headquarters



4200 Holland Blvd  
Chesapeake, VA 23323

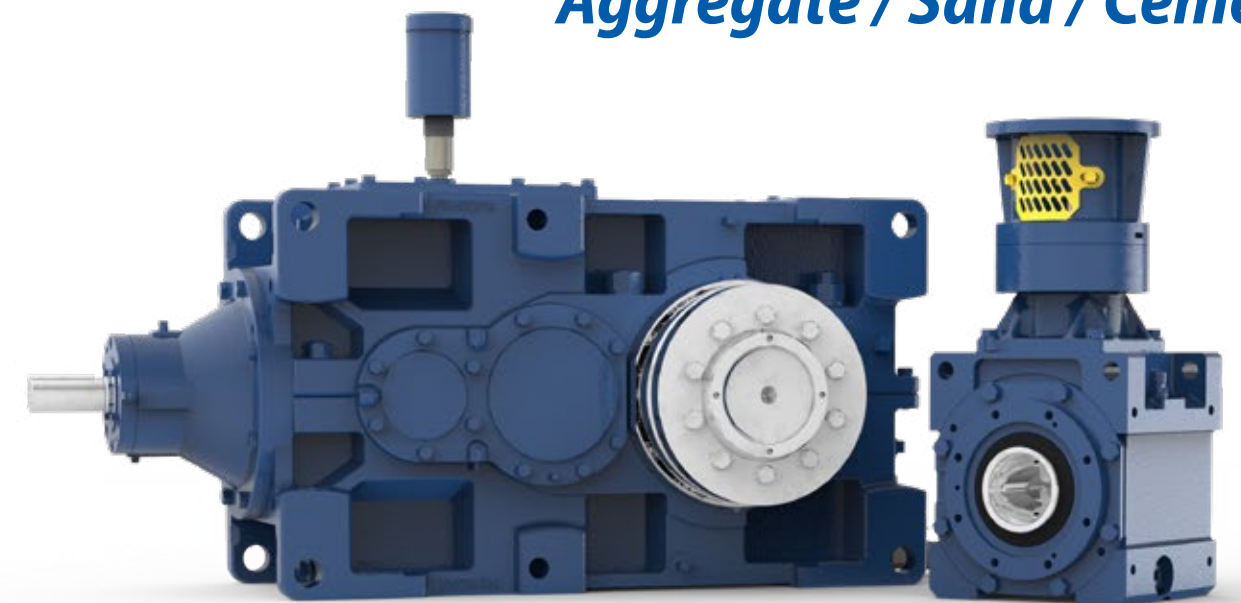
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#### Corporate Industry Manager

**Sara Kirkpatrick**  
Aggregate / Sand / Cement

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## Aggregate / Sand / Cement



Choose Sumitomo Drive Technologies for aggregate, sand, & cement applications.

We offer the toughest drives available to meet the harshest demands.

## We've Got You Covered

From **crushing, screening, dredging, and washing**, to **conveying and stacking**, Sumitomo Drive Technologies has a product to fit **your application**.

We can **lower** your total **cost** of ownership and reduce **maintenance** and **downtime**.

Let our **experts** assist you in reducing **Mine Safety and Health Administration (MSHA) citations** for powered **haulage incidents** and **guarding**.



## Our Commitment

### GET it Right

We provide the **right gearbox for the application**—not just any gearbox in our inventory. We offer **top-tier products** that perform well in any heavy-duty operation. **Local engineering, manufacturing, and assembly** allow us to customize these products to meet your needs.

### KEEP it Right

By using CycloSMART™, our intuitive **condition monitoring solution**, and following our **preventative maintenance** procedures—your gearbox will stay operational for years to come. Plus, with one of the **most extended warranties** in the gearbox industry, your operation and investment is well protected.

### MAKE it Right

**Customer experience is our top priority**. Our network of experienced **aftermarket experts** is always available with **after-hours service**, expedited gearbox replacements for select products, on-site inspections, maintenance & repairs, and more.

## Product Spotlight



### Cyclo® Bevel BuddyBox® 4

RIGHT ANGLE SPIRAL BEVEL WITH CYCLO® INPUTS

The Cyclo® BBB4 has a unique combination of features that result in a highly **reliable, efficient,** and **durable** gearbox with unmatched **ruggedness**.

#### Belt Drive Elimination

- Eliminates **Belt Maintenance**
- Eliminates **Safety Guarding** – MSHA Target
- Eliminates **Oil Leaks** Related to Belt Tension
- Eliminates **Cost** and **Stocking** of Extra Components

#### Convenient

- **Smaller** Overall Footprint
- **Easy** Installation and Removal
- Use **Existing Motor** With a C-Face Transition Kit
- **Many Configurations** Available
- **Large Access Windows** in C-Face Motor Adaptor

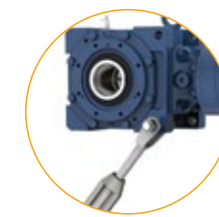
#### Unique Features

- **300%** Momentary Shockload
- **Easily Replace** Input Reduction Stage With **New Ratio**
- **Taper-Grip Bushing® XL** to Accept **Shorter** Shafts

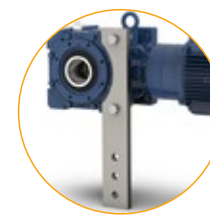
#### Efficient & Durable

- **Larger Bevel** Set to Achieve Right-Angle
- More **Efficient** Transmission of Torque
- Ductile **Iron** Housing
- **Runs Cool** With Cyclo® Design
- **Double** Input and Output **Seals**
- Extremely **Durable Backstop**

## Comprehensive Torque Arm Options



Turnbuckle



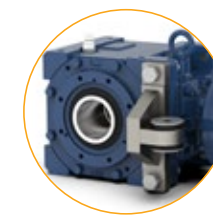
Transverse



European



Cast Iron Flange Mount



T-Type



Fabricated Flange Mount



## Challenge: V-Belt Issues

- Incorrect belt tension can cause **thrown belts**
- Thrown belts result in costly **downtime**
- Guards are unsafe and a target for MSHA **citations**
- Incorrect belt tension can cause **seal failure**
- Max gearbox input speed can be unknowingly exceeded—causing **failure**



## Challenge: Backstop Failure

- Backstop failure is a **safety risk**
- Backstop failure is a target for MSHA **citations**
- Does not achieve 100% lift-off which **shortens lifespan**
- Backstop failure results in frequent **downtime**
- Location exposes backstop to **large amounts of torque**
- Can cause gearbox to have **contaminated oil** or require **special oil**



## Challenge: Limited Torque Arms

- Turnbuckle torque arms means mounting is **limited**
- Poses a **safety risk** if installed incorrectly under **compression**
- Potential for incorrect installation of **rubber bushings**



## Challenge: Limited Coupling Access

- Two small access holes create a **blind install**
- Lack of window causes the unit to run **hotter**
- If coupling shifts but does not release, may need to **cut shaft**
- Without a large window, coupling options are **limited**

## Solution: Direct Drives

- **Eliminates** belts, sheaves, guarding, top/side motor mounts
- **Eliminates** belt changes, drastically reducing downtime
- **Eliminates** belt-related injuries and MSHA citations
- **Eliminates** belt tension-related oil leaks, which result in early failure
- **Flexible speed** can be achieved by changing only one component (Cyclo® cartridge) and is the only direct drive with this capability



## Solution: Long Lasting Backstops

- **Reduces** potential backstop-related injuries
- **Reduces** potential backstop-related MSHA citations
- **100% lift-off** achieved as located on high-speed shaft
- **100% maintenance-free** backstop
- **Least amount of torque** encountered on high-speed shaft
- **Sealed off** from gearbox for protection



## Solution: Range of Torque Arms

- **Wide range** of torque arms for all anchor points
- **Safer** torque arm options available for installation
- **Pre-installed** rubber bushing options for a simple install



## Solution: Large Access Window

- **Easy install** and removal due to increased visibility
- **Runs cooler** due to ventilation provided by window
- **Coupling easily accessible** eliminating the risk of having to cut the shaft
- **Expanded Range** of coupling options such as the time-saving Wrap Style, which is safer as it eliminates spreading shafts apart to change insert



• Multiple Torque Arm Types



• Foot



• Flange



• MOUNTING

• C-Face



• Quill



• Integral Motor



• INPUTS

• Solid Shaft



• Keyed Hollow Bore



• Shrink Disc



• Taper-Grip® Bushing



• OUTPUTS

DUCTILE IRON HOUSING

Twice as strong as cast iron, making it one of the most rugged bevel gearboxes on the market.



TAPERED BEARINGS

Resists axial and radial loads simultaneously.

TANDEM DUAL LIP SEALS

Prevent leaks and exclude contaminants.

SINGLE-PIECE PINION

Oversized, single-piece pinion provides a robust solution capable of 300% momentary shock-load. Designed and manufactured in the USA.

100% HARDENED STEEL COMPONENTS

Provide long life, smooth operation, and superior strength.

INTEGRAL BACKSTOP

At high-speed shaft to achieve 100% lift-off which increases life.

CYCLO® DISC

All rotating components are manufactured from fully hardened, vacuum degassed bearing-grade steel, for consistent, reliable performance.

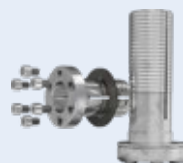
CYCLO® BEVEL BUDDYBOX® 4 (BBB4)

RIGHT ANGLE SPIRAL BEVEL WITH CYCLO® OR PLANETARY INPUTS

A robust, state-of-the-art, mid-sized suite of speed reducers and gearmotors. The Cyclo® BBB4 has a unique combination of features that result in a highly reliable, efficient, and durable gearbox. The all-steel internal construction, Cyclo® or planetary gear inputs and the ductile iron housing, provide unmatched ruggedness.

We offer a wide range of torque arm styles including, Turnbuckle, Transverse, T-Type, Cast Iron Flange-Mount, Fabricated Flange-Mount, and European. This makes mounting the BBB4 safe and simple.

OPTIONS



Taper-Grip Bushing® XL

Accepts shorter shafts for seamless direct drive upgrades. Allows for easy upsizing to higher mechanical ratings.



Screw Conveyor

SPECS



HP RATING  
Up to 100 HP  
(75 kW)



DIAMETER  
1in to 4-15/16in  
(Hollow & Solid)



TORQUE  
Up to 159,983 lb·in  
(18,076 N·m)



RATIO RANGE  
11:1 up to 26,000:1  
and greater

MOBIL SHC™ GEAR HI-SHOCK 150

- High-Performance Synthetic Lubricant
- Available for Cyclo® Products
- Extends the Life up to 3 Times
- Available 4-Year Warranty

• **Paramax® UniMiner**  
 Flippable housing and horizontal split line make the ideal alignment-free drive package for mining.



• **Right-Angle**



• **Parallel**



• **CONFIGURATIONS**

• **Solid Shaft**



• **Shrink Disc**



• **Keyed Hollow Bore**



• **OUTPUTS**

**SPLIT HOUSING**

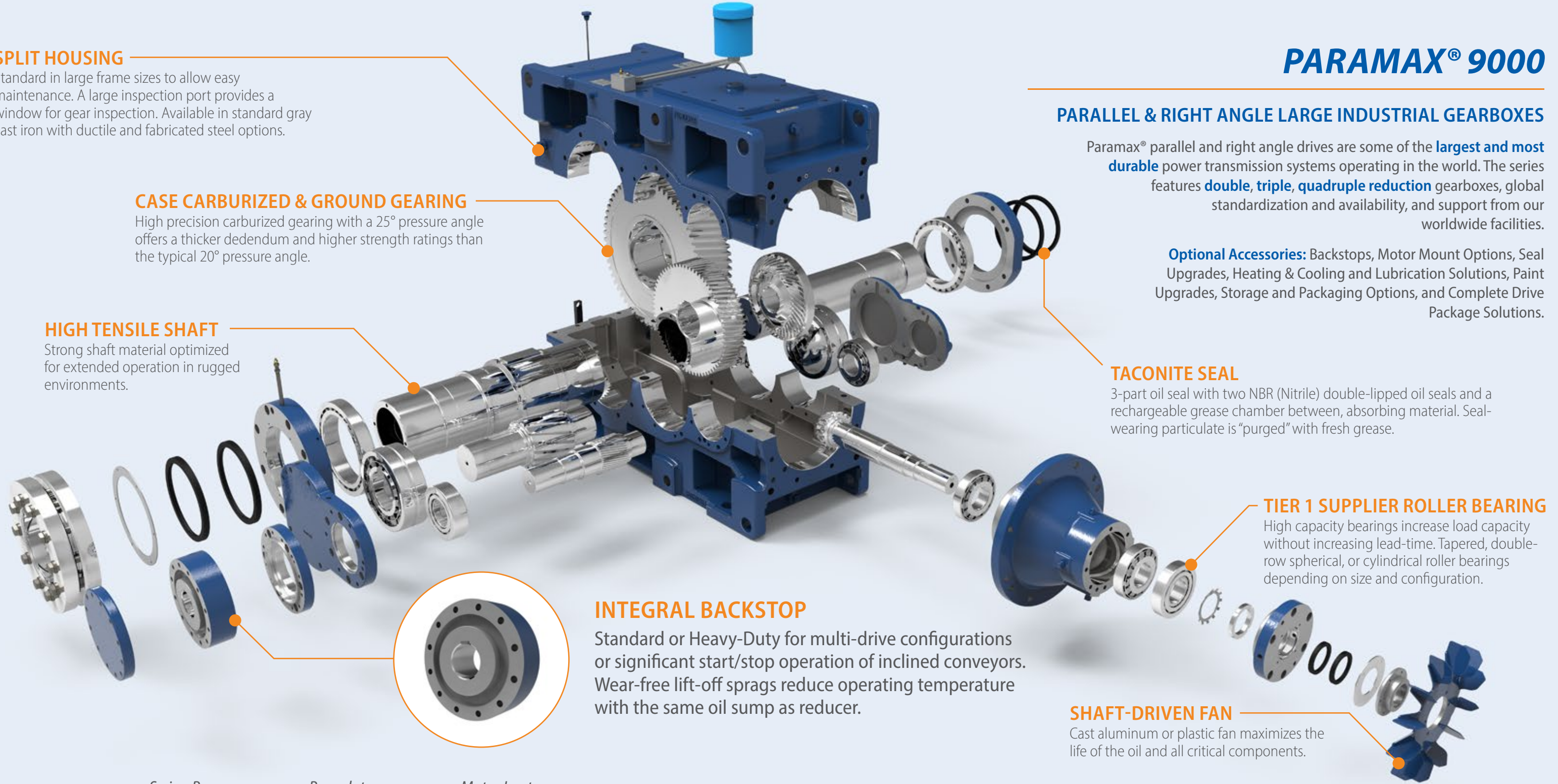
Standard in large frame sizes to allow easy maintenance. A large inspection port provides a window for gear inspection. Available in standard gray cast iron with ductile and fabricated steel options.

**CASE CARBURIZED & GROUND GEARING**

High precision carburized gearing with a 25° pressure angle offers a thicker dedendum and higher strength ratings than the typical 20° pressure angle.

**HIGH TENSILE SHAFT**

Strong shaft material optimized for extended operation in rugged environments.



**PARAMAX® 9000**

**PARALLEL & RIGHT ANGLE LARGE INDUSTRIAL GEARBOXES**

Paramax® parallel and right angle drives are some of the **largest and most durable** power transmission systems operating in the world. The series features **double, triple, quadruple reduction** gearboxes, global standardization and availability, and support from our worldwide facilities.

**Optional Accessories:** Backstops, Motor Mount Options, Seal Upgrades, Heating & Cooling and Lubrication Solutions, Paint Upgrades, Storage and Packaging Options, and Complete Drive Package Solutions.

**TACONITE SEAL**

3-part oil seal with two NBR (Nitrile) double-lipped oil seals and a rechargeable grease chamber between, absorbing material. Seal-wearing particulate is "purged" with fresh grease.

**TIER 1 SUPPLIER ROLLER BEARING**

High capacity bearings increase load capacity without increasing lead-time. Tapered, double-row spherical, or cylindrical roller bearings depending on size and configuration.

**INTEGRAL BACKSTOP**

Standard or Heavy-Duty for multi-drive configurations or significant start/stop operation of inclined conveyors. Wear-free lift-off sprags reduce operating temperature with the same oil sump as reducer.

**SHAFT-DRIVEN FAN**

Cast aluminum or plastic fan maximizes the life of the oil and all critical components.

**DRIVE PACKAGE**

Swing Base



Baseplate



Motor Lantern



**SPECS**



**HP RATING**  
 Up to 5,230 HP  
 (3,900 kW)



**DIAMETER**  
 58mm to 360mm  
 (Hollow & Solid)



**TORQUE**  
 Up to 4.9 million lb•in  
 (552 kN•m)



**RATIO RANGE**  
 Up to 500:1  
 Standard

- "H" Foot
- V-Flange
- F-Flange



**MOUNTING**

- Top Mount
- Quill
- Free Shaft
- Shovel Base
- Integral Motor
- Coupled C-Face



**INPUTS**

**SEALS**

Wear sleeves and pressure-rated to prevent leaks.

**HOUSING**

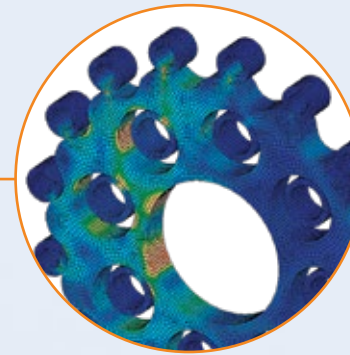
Rugged, shock-resistant cast iron housing. Optional ductile iron housing also available.

**RING GEAR HOUSING**

High power density, all reduction contained in compact ring gear housing.

**500% MOMENTARY SHOCK LOAD**

The Cyclo® design spreads the load across 2/3 of the reduction components, enabling the units to absorb and dissipate shocks better than typical concentric drives.



**CYCLO® DISC**

All rotating components are fully hardened, vacuum degassed bearing-grade steel, for consistent, reliable performance.

**DYNAMIC AIR MOTIVATOR**

**MOTIVATOR COVER**

**OIL LEVEL INDICATOR**

**SLOW-SPEED SHAFT**

**ECCENTRIC CAM**

**HIGH-SPEED SHAFT**

**CYCLO® 6000**

**UNMATCHED RELIABILITY & EXCEPTIONAL PERFORMANCE**

Cyclo® speed reducers and gearmotors are the **premier in-line drives**. The revolutionary Cyclo® design provides **quiet, efficient, and reliable** performance exceeding that of involute tooth gear designs.

Unlike geared designs, the Cyclo®'s reduction components **operate in compression** rather than shear, which results in exceptionally rugged and **shock-resistant performance**.

The Cyclo® technology coupled with innovative product options and accessories offer **the most extensive range** of application solutions available.

**MOBIL SHC™ GEAR HI-SHOCK 150**

- High-Performance Synthetic Lubricant
- Available for Cyclo® Products
- Extends the Life up to 3 Times
- Available 4-Year Warranty

**OPTIONS**



**Wheel Drive**

Double-reduction Cyclo® is torque-dense and compact. Superior internal components and non-splined motor shaft options for unmatched durability.

**SPECS**



**HP RATING**  
Up to 235 HP  
(175 kW)



**DIAMETER**  
1/2in to 7in  
(Solid Shaft)



**TORQUE**  
Up to 603,000 lb-in  
(68,130 N·m)



**RATIO RANGE**  
3:1 up to 658,503:1

# OPTIDRIVE E3

## GENERAL PURPOSE DRIVE

A **compact, robust, and reliable** general purpose drive.

Focused on ease of use, Optidrive E3 provides **unrivaled simplicity** of installation, connection, and commissioning, allowing the user to benefit from **precise motor control** and **energy savings** within minutes.

Available in **IP66/Nema 4X rating** with tough polycarbonate plastics specifically chosen to **withstand degradation** by ultraviolet (UV), greases, oils, and acids. Also, robust enough not to be brittle at -20°C (-4°F).

- 150% Overload for 60 seconds
- 175% Overload for 2.5 seconds
- 98% Efficiency


 Compliant with international standards.



ENCLOSURES



**INTEGRATED DISPLAY**  
Remote Keypads provide real time operating information display and parameter access.

**FAST CONNECTION**

5mm rising clamp terminals with captive screws.

**KEYHOLE MOUNTS**

**QUICK REFERENCE**

Integrated help card.

**OPTISTICK SMART**

Rapid Commissioning Tool that allows copying, backup, and the restoring of drive parameters.



**DUAL ANALOG INPUTS**

**INTEGRATED CABLE MANAGEMENT**

**PLUGGABLE CONTROL TERMINALS**

**FANS**  
High-quality long-life fans.

# OPTIDRIVE P2

## HIGH PERFORMANCE DRIVE

A **high-performance** variable frequency drive for standard induction and permanent magnet motors.

Its **user-friendly interface** and high performance make it perfect for tackling the most demanding applications smoothly.

Extensive I/O and Fieldbus **communication protocols** such as Ethernet/IP and others, ensure the drive can be **easily integrated** into a wide variety of control systems.

Dedicated Hoist Mode Operation with motor holding brake control makes it perfect for marine and elevator applications.

- 200% Overload for 4 seconds
- 98% Efficiency
- Integral Brake Transistor

**SPECS**



**HP RATING**  
Up to 400 HP  
(250 kW)



**POWER OPTIONS**  
Single-Phase: 200-240V  
3-Phase: 200-600V



**TORQUE**  
Up to 200%  
(From Zero Speed)

Make belt-related costs and downtime a thing of the past.

Avoid catastrophic failure, minimize risk, and increase production uptime.

## Upgrade Your Belt Drive to a Direct Drive

We make the process of **upgrading** to a direct drive, **simple**. Either **remotely** or **on-site**, let us quickly **assess** your application data and suggest the **perfect** direct drive.

Motor: \_\_\_\_\_ **hp**  
 Motor: \_\_\_\_\_ **rpm**  
 NEMA Frame: \_\_\_\_\_  
 Existing Reducer: \_\_\_\_\_  
 Existing Reducer Ratio: \_\_\_\_\_ **:1**  
 Driver Sheave (Motor): \_\_\_\_\_ **"**  
 Driven Sheave (Reducer): \_\_\_\_\_ **"**  
 Head Pulley Shaft Diameter: \_\_\_\_\_ **"**  
 Usable Shaft Length: \_\_\_\_\_ **"**  
 Backstop Desired: **Yes | No** (will eventually need rotation)  
 Motor Orientation: **Motor Vertical Up | Motor Horizontal**

### Let us Help Calculate Your ROI

#### Typical Conveyor Downtime - Thrown/Broken Belts

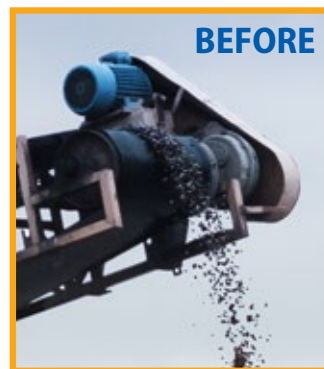
- 15 min - **Lockout** / Tagout
- 30 min - **Discovery** of Problem
- 30 min - Locate **Man-Lift** and Relocate
- 15 min - **Harness** Up
- 15 min - Remove **Guard**
- 15 min - Remove **Belts** and Check Belt Size
- 30 min - Find **New** In-Stock Belts
- 15 min - **Install** Belts and Adjust Tension Correctly
- 15 min - **Replace** Guarding
- 30 min - **Scoop Belt?** (not included in total below)
- 15 min - Remove **Lockout** / Tagout
- 15 min - **Restart** Equipment

Total Unplanned Downtime: **3.5 Hours** x (\$3,000)

**\$10,500** for a **SINGLE** belt change  
(Lost production based on TPH of plant - adjust accordingly)

Replacing a Belt 4 Times a Month:  
**\$42,000** or **\$504,000** A YEAR!

**Backstop failures** are potentially **more costly** due to **longer** downtime and **higher** parts cost.



## System Management And Reliability Technology (SMART)

**SMART** is a range of products and reducer options that were developed to help end users in their **reliability** and **asset management** initiatives within their plant's daily operations.

- **Safe**  
Safely monitor assets via network
- **Predictive**  
Machine diagnostics for early warning
- **Optimization**  
Customizable systems to meet many needs
- **Expandable**  
Multi-reducer monitoring
- **Reliable**  
Schedule machine downtime
- **Cost-Effective**  
Lower overall ownership cost

Experience **worry-free** operation with **constant** condition monitoring of **vibration, temperature, oil level, oil humidity, oil flow, oil particulates**, and more. SMART is **compatible** with reducers from Sumitomo Drive Technologies, **competitor units, motors, pumps**, and more.

the **CHECK**   
**ENGINE LIGHT** for  
**SPEED REDUCERS**

*It's all about **detecting small issues today before they become costly failures tomorrow.***





*Retro-Fit units with transition bases allow us to match your existing footprint.*

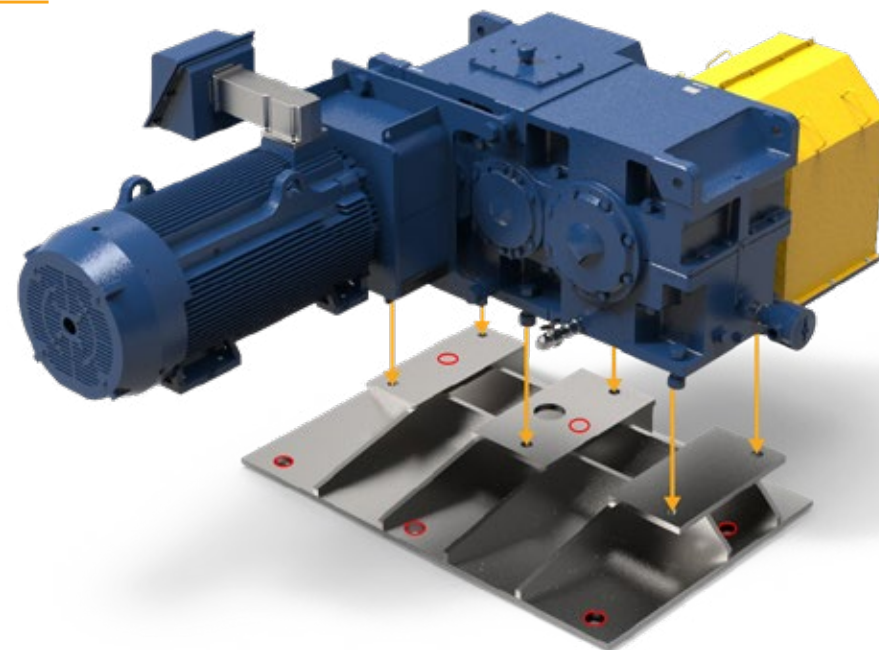
*Custom drop-in units made to match existing unit's critical dimensions.*

## Upgrade and Replace

Don't let **ageing** units and lack of **support** slow down your operation.

Retrofits, drop-ins, and custom specialty units allow us to **upgrade** and **replace** competitor units.

We can replace your unit with **minimum** impact while delivering an **improved** replacement product.



## Retro-Fit

*Match the Existing Unit's Footprint*

One of our standard gearboxes with a custom **transition base** will position the new low-speed shaft to be in the **EXACT** same position as the original low-speed shaft.

Retrofits are an excellent balance between the **cost savings** of a standard gearbox and the benefits of minimal on-site modifications.

We offer a range of **motor mounting** options to facilitate motor mount relocation.

The red circles in the diagram represent the **existing** bolt pattern of a customer's unit.

## Drop-In

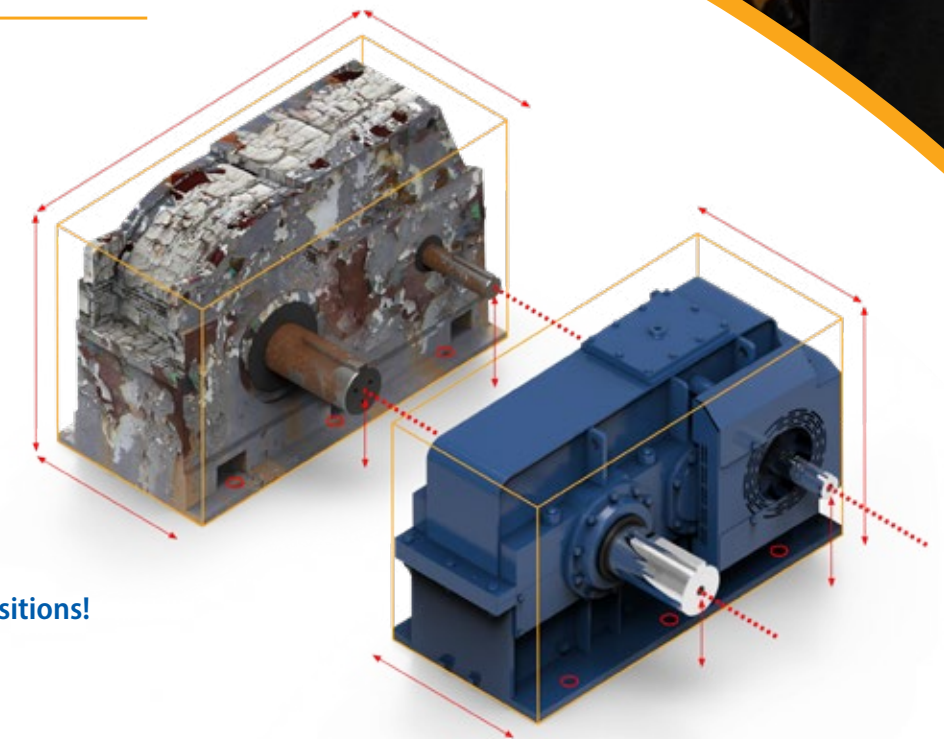
*Match the Existing Unit's Critical Dimensions*

**Installation-ready** units are designed specifically to drop-in to existing applications with ease.

We can have your application back up and running with **no modifications** needed from you.

We offer fabricated steel housings, custom baseplates, custom gearing and shafting and more!

This product will literally **drop-in** to place; **same footprint, same shaft positions!**



## Specialty Units

*Custom Units to Fit Any Application*

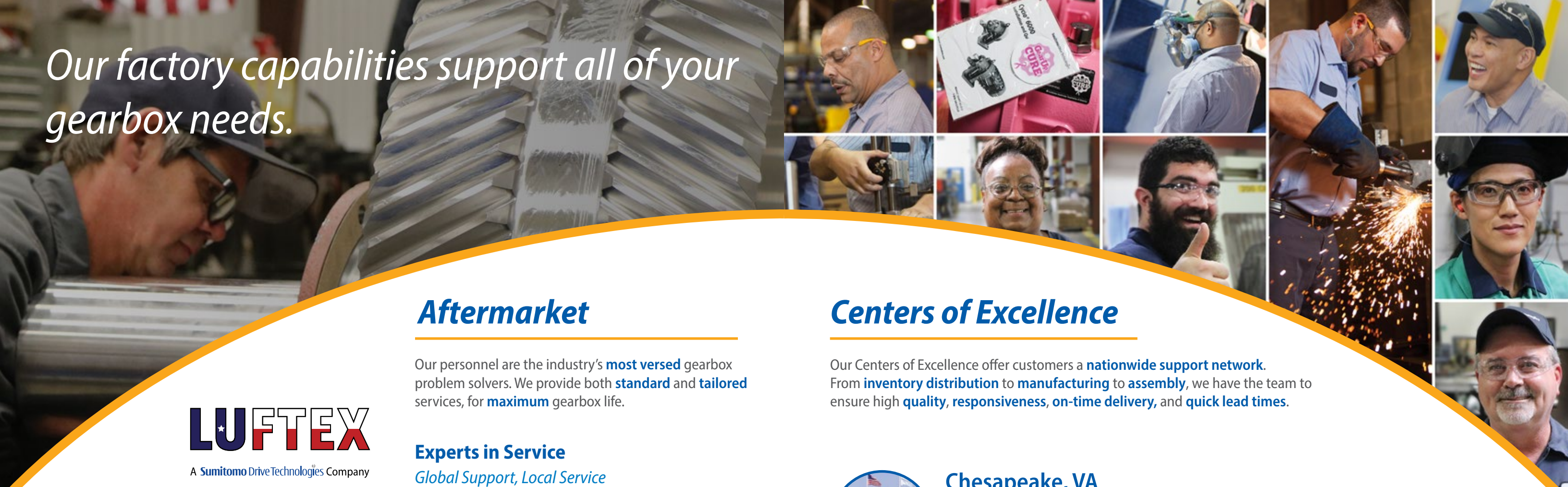
From **non-standard** gearing to **custom ratios**, our team of engineers will make sure all of your custom gearbox needs are met.

Let us solve the **problem** areas and bottlenecks in your operation.



Custom Log Washer

Our factory capabilities support all of your gearbox needs.



**LUFTEX**

A Sumitomo Drive Technologies Company

### Repairs

*Scheduled & Emergency Repair*

Repair services for all your related gearbox needs and **24-72 hour turnaround** to the original factory specifications and warranty using Sumitomo-manufactured parts.

*Extended warranty programs are available upon request.*

### On-Site Inspections

*Failure Detection*

Our industrial gearbox **inspection** services and **reporting** will help you **detect failures** as early as possible and ensure the efficiency of your application.

### Field Services

*For Your Convenience*

Most of the services offered and customized training can be performed **on location**.

## Aftermarket

Our personnel are the industry's **most versed** gearbox problem solvers. We provide both **standard** and **tailored** services, for **maximum** gearbox life.

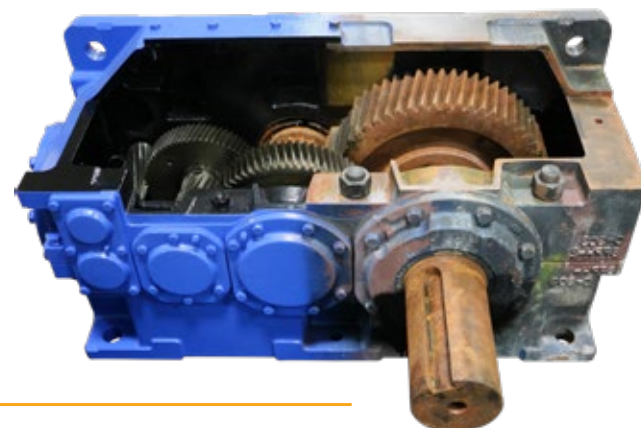
### Experts in Service

*Global Support, Local Service*

With a vast network of engineers and gearing experts, there is **no problem** we can't handle.

In addition to our extensive network, **LUFTEX Gears Manufacturing and Services** provides unmatched capabilities and expertise in the area of **custom** gearbox **repair** and **service**. With state-of-the-art equipment, no gearbox is too big for us to handle.

Whether custom gear manufacturing or on-site gearbox repair, let our team at LUFTEX **keep your operation running**.



## Centers of Excellence

Our Centers of Excellence offer customers a **nationwide support network**. From **inventory distribution** to **manufacturing** to **assembly**, we have the team to ensure high **quality, responsiveness, on-time delivery, and quick lead times**.

### Chesapeake, VA

#### Manufacturing, Support, Inventory, and Training

Our Western Hemisphere headquarters has **250,000 ft<sup>2</sup> of manufacturing space**, and cutting-edge technology. Centralized inventory distribution with a **Foreign-Trade Zone (FTZ)**, focused on inventory optimization, motor assembly, and hands-on training at our Power Institute.



### Verona, VA

#### Industrial Gearbox Production

This purpose-built facility is specifically designed to handle the assembly of our **large industrial gearboxes**.



### Lufkin, TX

#### Manufacturing and Services

This 32,000 sq ft facility handles gear manufacturing, **gearbox repairs**, and reverse engineering.

### Glendale Heights, IL

#### Gearmotor Assembly and Support

Our Mid-West facility is optimized for high volume solutions focusing on **small to medium gearmotors**.



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