

Sumitomo Drive Technologies

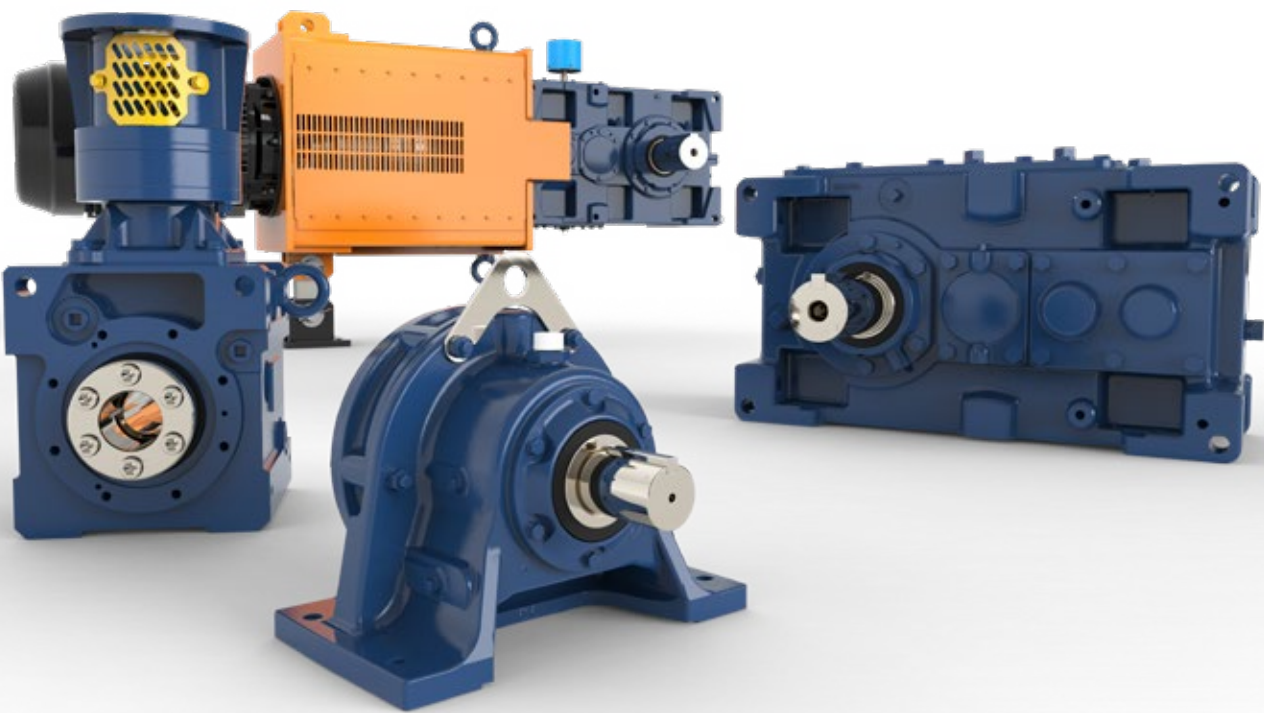
A global power transmission solutions provider, with facilities strategically located throughout the world, providing comprehensive products and services in your region.



Sumitomo Drive Technologies

MINING

INDUSTRY-LEADING DRIVES AND SOLUTIONS



HEADQUARTERS



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Why choose Sumitomo Drive Technologies for Mining applications?

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

WE KNOW THE MINING INDUSTRY

The Mining industry plays a **vital role** in some of our everyday needs. Materials obtained from mining are an **essential component** of modern technology. They can create everything from home energy with coal to powering smartphones with gold, silver, copper, and more.

Sumitomo Drive Technologies understands the **world's reliance** on the mining industry and its importance. We've increased our efforts in supporting this essential industry with a **robust combination** of products, people, production, programs, and perseverance. Our presence on the global mining stage speaks volumes about our past, present, and future commitment to it.

Our company is one of the world's **leading suppliers** of drive packages for the mining industry. Whether you're mining copper in the mountains of Chile, coal in the Appalachians, or Potash in Saskatchewan, we have gearing and drive solutions to meet your needs. From overburden to ship loading and every application in between, our team of expert engineers worldwide combines knowledge and experience to design **custom solutions** that meet any demand. Mining applications and environments are tough, but **our gearboxes are tougher**.

With so many ways to lower your total cost of ownership, let Sumitomo Drive Technologies help keep your operation running **effectively and efficiently**.

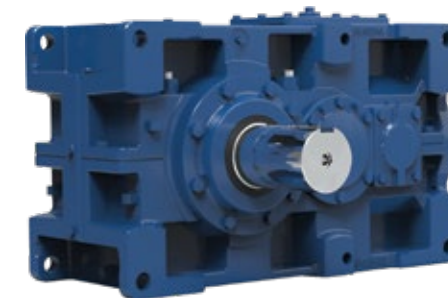
■ The Right Gearbox for the Right Job

We are interested in selling the **right gearbox for the application**—not just any gearbox in our inventory. Sumitomo Drive Technologies has the products that perform.

Standard large industrial gearboxes are **pre-engineered** and **manufactured** to be assembled from **our inventory**. Local engineering, manufacturing, and assembly allow us to customize these products to meet your needs.

Our large industrial gearboxes also have various **upgrades** and **performance monitoring products** to keep each gearbox in action. By following our preventative maintenance procedures, you ensure your gearbox lives a long life. If your gearbox has an issue, our **experienced network of aftermarket experts** are **always available**. Plus, with one of the longest warranties in the gearbox industry, your operation is well protected.

We ask the **right questions** to ensure you have the correct industrial gearbox for your **specific application**. Customer experience is our **top priority**, and we want to ensure that our customers can get the modifications or custom options they desire.



■ PARAMAX® 9000

- AGMA Class 11+ Gearing
- Power Dense
- 25° Pressure Angle Gear Teeth



■ HANSEN UniMiner

- Rugged Flippable Housing
- P4 Gearing
- Competitive Drop In



■ HANSEN Vertical P4

- Standard Drywell
- Horizontally Split Housing
- Maintenance Free Oil-Lock®



■ HANSEN P4

- Rugged Housing
- Large Lube Capacity
- Modular Design



■ CYCLO® BBB 4

- Taper-Grip® Bushing
- Compact Design
- Multiple Input Styles



■ CYCLO® 6000

- Cycloidal Technology
- Optimal Efficiency
- Hi-Shock Overload Resistance



■ CYCLO® HBB

- Cycloidal Technology
- Splash Lubrication
- Modular Design

Old gearboxes are high maintenance and use outdated technology and parts.

Modern gearing technology offers lower maintenance and safer operation.



■ THE CHALLENGE:

Outdated technology and unsafe conditions

Older speed reducers use **multiple components** to transmit torque, requiring **bulky** safety covers to minimize pinch points and related hazards.

■ OBSOLETE EQUIPMENT PROBLEMS:

- **Reduced** operating efficiency.
- Alignment **concerns** and **issues**.
- Lubrication results in **leaking oil** and a **dirty** operating environment.
- **Worn** and **noisy** components.
- **Difficult** to repair and/or replace.
- Higher shaft loads and **bearing wear**.
- **More** wear parts to maintain.



■ THE SOLUTION:

More efficient gearbox with the reduction needed to eliminate extra outdated components

Our gearboxes can be manufactured in many **different ratios** and **various output shaft arrangements**. We have an assortment of options to choose from to help you incorporate the total reduction of the gearbox and sheave/chain drive combination into **one simple, reliable, robust, and safe** drive system. With Sumitomo Drive Technologies powering your mining operation, you can expect **reduced** operation costs, **increased** efficiency, and a known brand to help you with your gearbox needs.

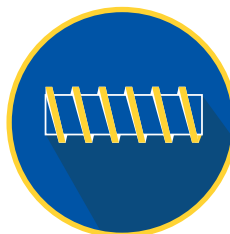
■ OUR PROBLEM SOLVERS:

- Sumitomo Drive Technologies offers **multiple sealing solutions**.
- Newer technology often means **smaller** units, requiring **less oil** to store or worry about.
- New gearboxes come with new **technology, warranties, and support**.
- Our products are designed with current technologies for high capacity, high efficiency, low noise and **reliable** operation.

Conveyor Belt



Screw Conveyor



Bucket Elevator



Apron Feeder



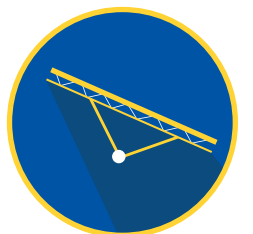
Kiln



Slurry Pump



Radial Stacker



Travel Drives



Winches



Mixer/Aerator/Flotation



Ball/SAG Mill



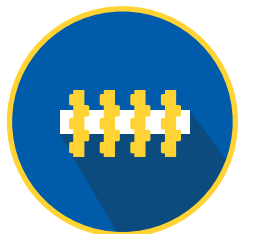
Crusher/Sizer



Thickener



Feeder Breaker



Our team of factory-trained technicians has centuries worth of experience.

Connecting you to the Service you need.

AFTERMARKET

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

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 Drive Technologies-manufactured parts.

Extended warranty programs are available upon request.

ROOT CAUSE INVESTIGATION

Product Support

Apply a **wide range** of approaches, tools and techniques to uncover the **causes** of your problems.

ON-SITE INSPECTIONS & MAINTENANCE

For Your Convenience

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

EXPERTS IN SERVICE

Global Support, Local Service

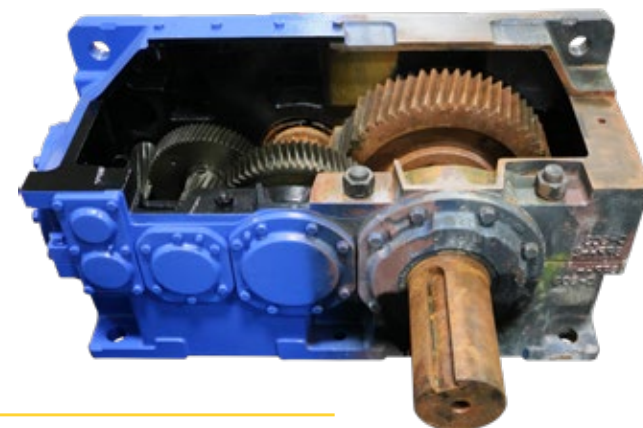
With a **vast network** of engineers and gearing experts, there's **no challenge** we can't tackle.

Our **Luftex facility**, a core part of our operation, brings **unmatched capabilities** and deep **expertise** in **custom** gearbox repair and service. Equipped with state-of-the-art technology, we're built to handle even the **largest** and most **complex** gearboxes.

Sumitomo Drive Technologies

LUFTEX

From custom gear manufacturing to on-site gearbox repair, count on the team at our **Luftex facility** to keep your operation **running smoothly**.



CUSTOM SOLUTIONS

Our **gearing engineers** can design upgrade options for existing units to increase performance or design complete **custom** drop-in replacement units that fit into an existing footprint and envelope.

ON-SITE SOLUTIONS

Our team of **experienced** technicians and engineers can travel to your location to complete your requested repairs and maintenance. These solutions can **minimize downtime** and get your operation back up and running.

SERVICE SOLUTIONS

Flexible Solutions for Your Business Needs

- Engineering Design and Analysis
- Reverse Engineering of Customer Components
- Design Upgrade Recommendations
- Disassembly and Evaluation of Gear Units
- NDT Inspections
- Manufacturing of Gear Components
- Full-Service Machine Shop
- On-Site Technical Support for Customer Repairs
- Field Service Rebuilds and Repairs
- Commissioning and Start-Up Services
- Root Cause Investigations
- Condition Monitoring

REPAIR AND REBUILD SOLUTIONS

Scheduled or emergency **repairs** can be completed **on time and within budget** by our Aftermarket team. Utilizing OEM parts and in-house machining and manufacturing capabilities allows us to meet your needs for a quality and timely repair.



email: SMA.Service@shi-g.com

phone: **757-485-3355**

web: US.SumitomoDrive.com

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.

RETRO-FITS & DROP-INS

Whatever your requirements, **we have a solution** for you. Sumitomo Drive Technologies offers **customized bases** which allow our units to **match the footprint** of an array of existing applications and **drop-in gear drives** to **upgrade** and **replace** competitor units.

With a wide range of **options**, our **engineers** can replace your unit with **minimum impact** while delivering a **premier product** with **performance** and **reliability**.

RETRO-FIT

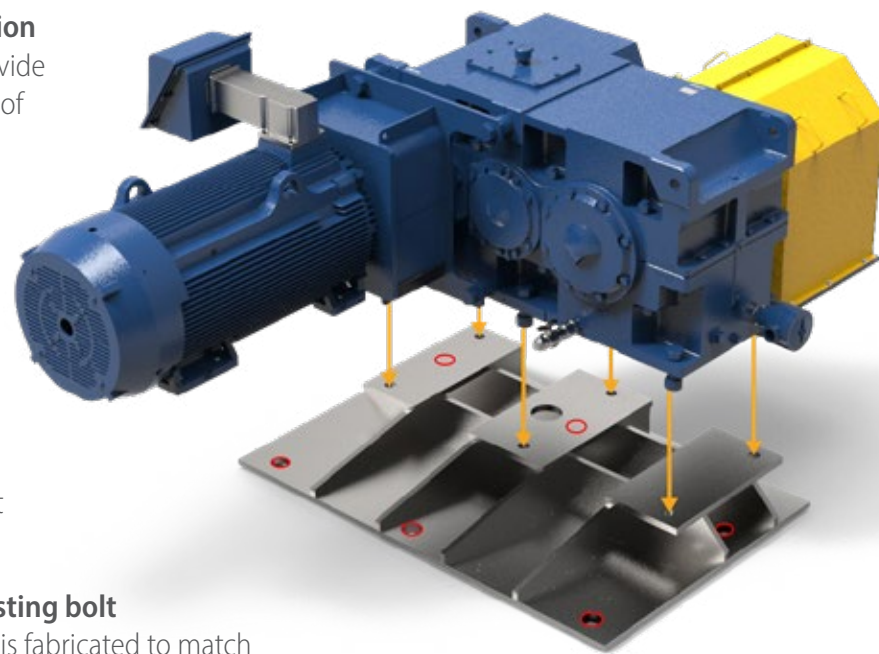
Match Existing Footprint

A **custom transition base** will position the new low-speed shaft to be in the **EXACT same position** as the original low-speed shaft. Our retro-fits provide an **excellent balance** between the cost savings of a standard gearbox and the benefits of minimal on-site modifications.

Typically, only relocating the motor mount is required for this option. We offer **motor mounting options** to help **minimize the impact** of relocating the motor mount, such as a flanged motor adapter for c-face or d-flange motors.

Options might include a special low-speed shaft diameter or length and motor lantern.

The **red circles** in the diagram represent the **existing bolt pattern** of a customer's unit. The transition base is fabricated to match the height, **ensuring alignment** of the low-speed shaft to the machine shaft.



DROP-IN

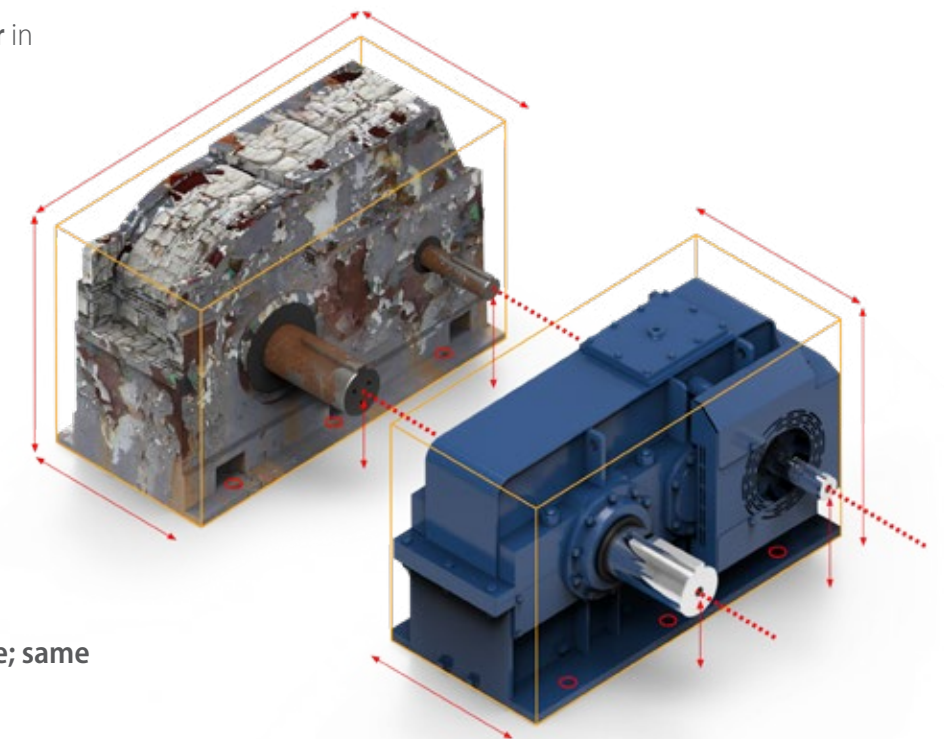
Match Existing Unit's Critical Dimensions

With **downtime** being such a **critical factor** in your operation, **let us install** one of our custom drop-in units.

Installation-ready units are designed specifically to **drop-in to existing applications** with ease. Our **expert engineers** understand that on-site modifications or re-engineering your system is not always an option.

These **stress-free replacements** can have your application back up and running in **no time**. 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

For **non-standard gearing** and **custom ratios**, we offer special customized units to fit in **any application**.

From custom paint to intricate gearbox lubrication systems, **our team of engineers** will make sure all of your custom gearbox needs are met.

We have **exceptional** engineering and factory **capabilities** to support your gearbox needs.



*We take asset management seriously,
because we know you do.*

*Avoid catastrophic failure, minimize risk
and increase machine uptime.*

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.



Condition Monitoring

Fully customizable systems provide real-time condition data of any piece of rotating equipment. Providing an accurate condition signal without the need for further analysis.

All Gearboxes

OPTIONS **

- Vibration + Temperature Input
- Vibration + Oil Level Input
- Vibration + Oil Condition

WE THINK!



Reliability Monitoring

These reducer option packages help support the consistent collection of data for vibration analysis, oil-condition monitoring, and cleanliness testing.

Large Industrial Gearboxes

OPTIONS*

- Opt 1: Machined Accelerometer Mounting Pads Only
- Opt 2: Opt 1 + Accelerometers Wired to Junction Box
- Opt 3: Opt 2 + Outputs to Customer PLC or DCS

YOU THINK!

■ CYCLOSMART® BENEFITS

- **Safe**
Monitor assets from the safety of your desk via networked connections.
- **Predictive**
Machine diagnostics for early warning and detection to avoid failure.
- **Optimization**
Customizable systems to meet many different application needs.
- **Expandable**
Multi-reducer monitoring.
- **Reliable**
Schedule machine downtime to avoid lost production.
- **Cost-Effective**
Lower overall ownership cost.

the **CHECK** 
ENGINE LIGHT for
SPEED REDUCERS

* All DriveSMART options include: Hydroscopic breather with 3mm filter, drain/fill connection for on-line filtration, and oil sample pitot tube port.

** All CycloSMART® systems are customizable with many different options for data monitoring. Examples are shown.

Learn more at:
US.SumitomoDrive.com/CycloSmart



OPTIDRIVE E3

GENERAL PURPOSE DRIVE

Compact, robust, and reliable general purpose drive.

Focused on ease of use, Optidrive E3 provides **unrivalled 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 outdoor 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

FAST CONNECTION

5mm rising clamp terminals with captive screws.

KEYHOLE MOUNTS

QUICK REFERENCE

Integrated help card.

OPTISTICK SMART

This rapid Commissioning Tool allows copying, backup, and the restoring of drive parameters.



DUAL ANALOG INPUTS

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)



Compliant with international standards.

IP20



IP66



Non-Switched

IP66



Switched

IP20



IP55



IP66



ENCLOSURES



INTEGRATED DISPLAY

Remote keypads provide real time operating information display and parameter access.

INTEGRATED CABLE MANAGEMENT

PLUGGABLE CONTROL TERMINALS

FANS

High-quality long-life fans.

OPTIDRIVE P2

HIGH PERFORMANCE DRIVE

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

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

Extensive I/O and communications **interface capabilities** ensure the drive can be **integrated quickly and efficiently** 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

Our factory capabilities support all of your gearbox needs.



WHY SUMITOMO?

The **history** of the Sumitomo Group started more than **400 years ago** when Masatomo Sumitomo opened a book and pharmacy store in the city of Kyoto, Japan. **Today**, the **Sumitomo Group** consists of more than **20 companies** who share the Sumitomo Emblem as well as many common values and ideals.

Devoted to Quality

In addition to one of the most **comprehensive product lines** of any power transmission company, we offer the most **reliable** and **highest quality** products available in the industry.

Whether it's product development or manufacturing processes, our **quality culture** resonates through our entire **global network**.

Committed to our Employees and the Community

We recognize our **employees** are our most valuable asset. They are the **driving force** behind our innovative products, our ability to support our customers, and our commitment to continuous process improvement.

We strive to be a **valuable member of society** and take pride in the contributions we make to our **communities** across North and South America.

Dedicated to Innovative Manufacturing

With more than a **century of expertise** in manufacturing, our global **capabilities** are **unmatched** in the industry.

We have manufacturing and assembly facilities on **every continent** and continue to make investments in our manufacturing technologies to maintain our position as a **leader in innovation**.

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 **360,000 sq ft 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

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



GLENDALE HEIGHTS, IL

Gearmotor Assembly and Support

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



LUFKIN, TX

Manufacturing and Services

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



MARINE CITY, MI

Manufacturing and Services

This facility handles gear **manufacturing** and **repairs** with a 10,000 sq ft **gear grinding center**.