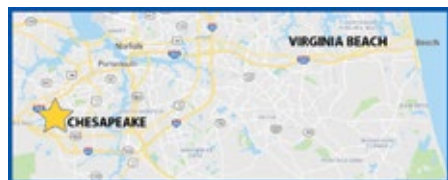


A global power transmission solutions provider, with facilities strategically located throughout the world, providing comprehensive products and services in your region.

MIXER DRIVES

COMPLETE, ROBUST, AND POWERFUL MIXING SOLUTIONS

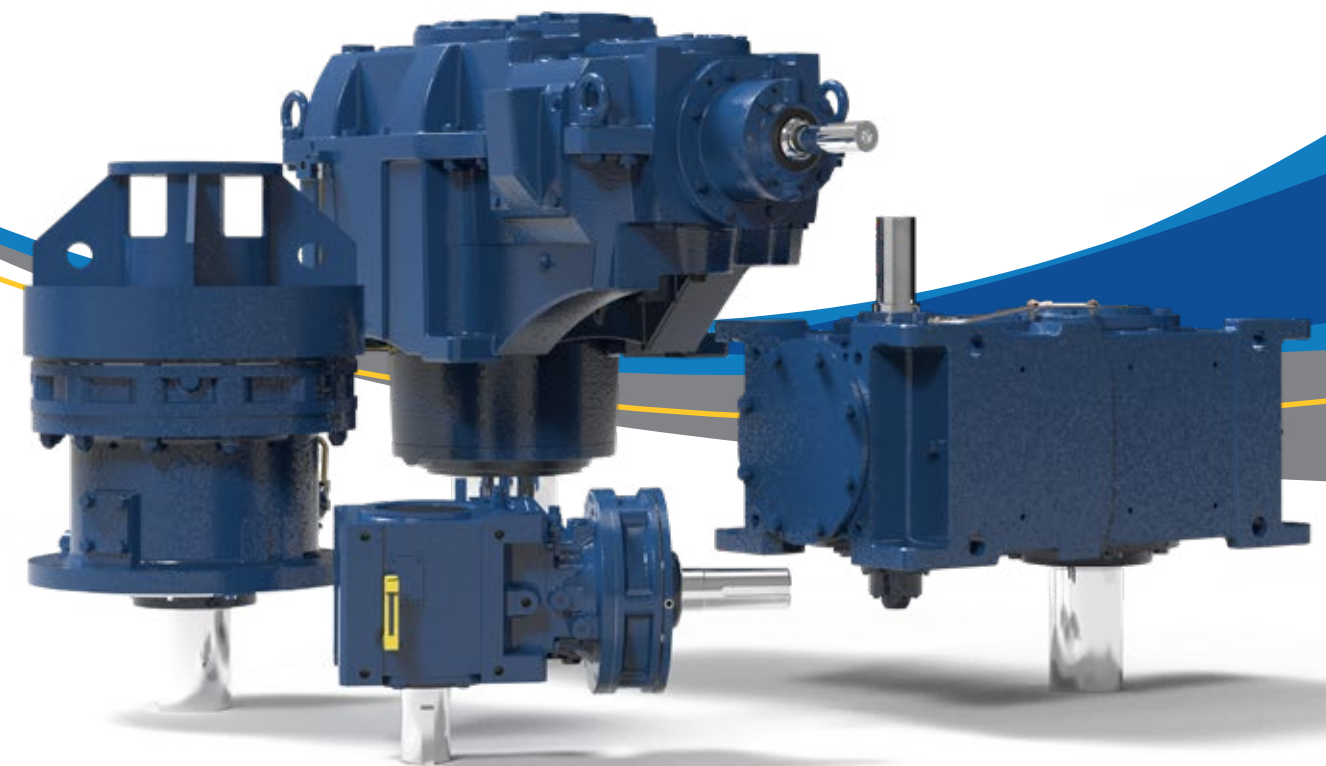
HEADQUARTERS



4200 Holland Blvd
Chesapeake, VA 23323

Email: SMA.CustomerService@shi-g.com
Phone: 757-485-3355

- ★ MANUFACTURING HUB & HEADQUARTERS
- ★ MANUFACTURING HUB
- ASSEMBLY & SERVICE
- SERVICE
- ▲ REGIONAL SALES OFFICE





SPLIT HOUSING

Rugged, split housing for horizontal and vertical applications. Round housing tops help keep the unit free from debris. Stepped housing design means a small mounting footprint.

GEARS

High-torque geometry in low-speed gears. Low-noise geometry in high-speed gears.

PINION SHAFTS

Rigid standardized pinion shafts and housings for better lateral load distribution.

SLOW-SPEED SHAFT

Shaft projections include captured keyways with rounded end key inserts to eliminate stress concentrations. Standard low-speed shaft upgrades include:

- Reinforced Solid Shaft
- Extended Bearing Housing
- Hollow Shaft with Shrink Disc
- Hollow Shaft with Keyway

INTERNAL POCKETS

Exceptional housing design ensures bearings are lubricated at start-up to maximize reliability and life.

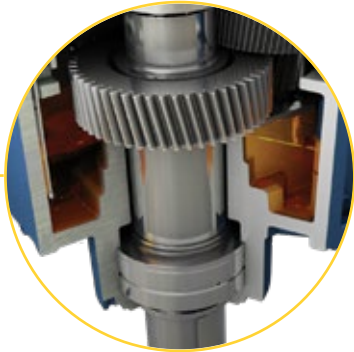


The Hansen P4 offers **high radial and axial load carrying** capabilities, with a **dedicated vertical housing**. Its exclusive design offers the ability to increase shaft size to handle larger loads without increasing the unit's case size. The P4 is a highly customizable gearbox with standardized industrial gear units that feature low noise and minimum weight. The split gear housing design also makes the unit **easy to service** without having to remove the equipment.

The Hansen P4 vertical gearbox is available in 17 different sizes, with up to **9,700,000 lb•in.** output torque. It offers two, three, and four stages and reduction ratios between 6.4:1 and 630:1. The housings are available with a parallel or right-angle shaft configuration, with either a solid or hollow low-speed shaft.

LOW-SPEED BEARINGS

Standard arrangement includes spherical roller bearings for combined axial and radial shaft loads. Bearing upgrades are available for the most demanding mixer shaft loads.



INTEGRATED DRYWELL

Cast directly into 3- and 4-stage vertical housings, this integrated drywell provides a truly leak-proof, low-speed shaft solution.

HIGH-SPEED SHAFT

Extra-long high-speed shaft projections suitable for interference-free coupling connections.

MAINTENANCE-FREE OIL-LOCK®

Standard high-speed seal is a dynamic non-contact seal arrangement. Non-contact seals are maintenance-free and will not damage the shaft during operation.

SPECS



HP RATING
Up to 14,080 HP
(10,500 kW)



DIAMETER
80 mm to 400 mm
(Solid, Heavy-Duty,
and Hollow)



TORQUE
Up to 9.7 million lb•in
(1.1 million N•m)



RATIO RANGE
Up to 630:1 (Custom
ratios available)

INDUSTRIES



Chemical



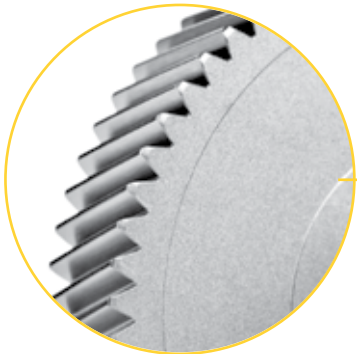
Mining



Water Treatment

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.



AVAILABLE SPLIT HOUSING

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

PARAMAX® 9000

Built upon seventy years of Sumitomo Drive Technologies excellence, Paramax® 9000 vertical mixer drives are some of the **largest and most durable** power transmission systems operating in the world.

The Paramax® 9000 product line features **double, triple and quadruple reduction** gearboxes, global standardization, and 26 frame sizes.

SPECS



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



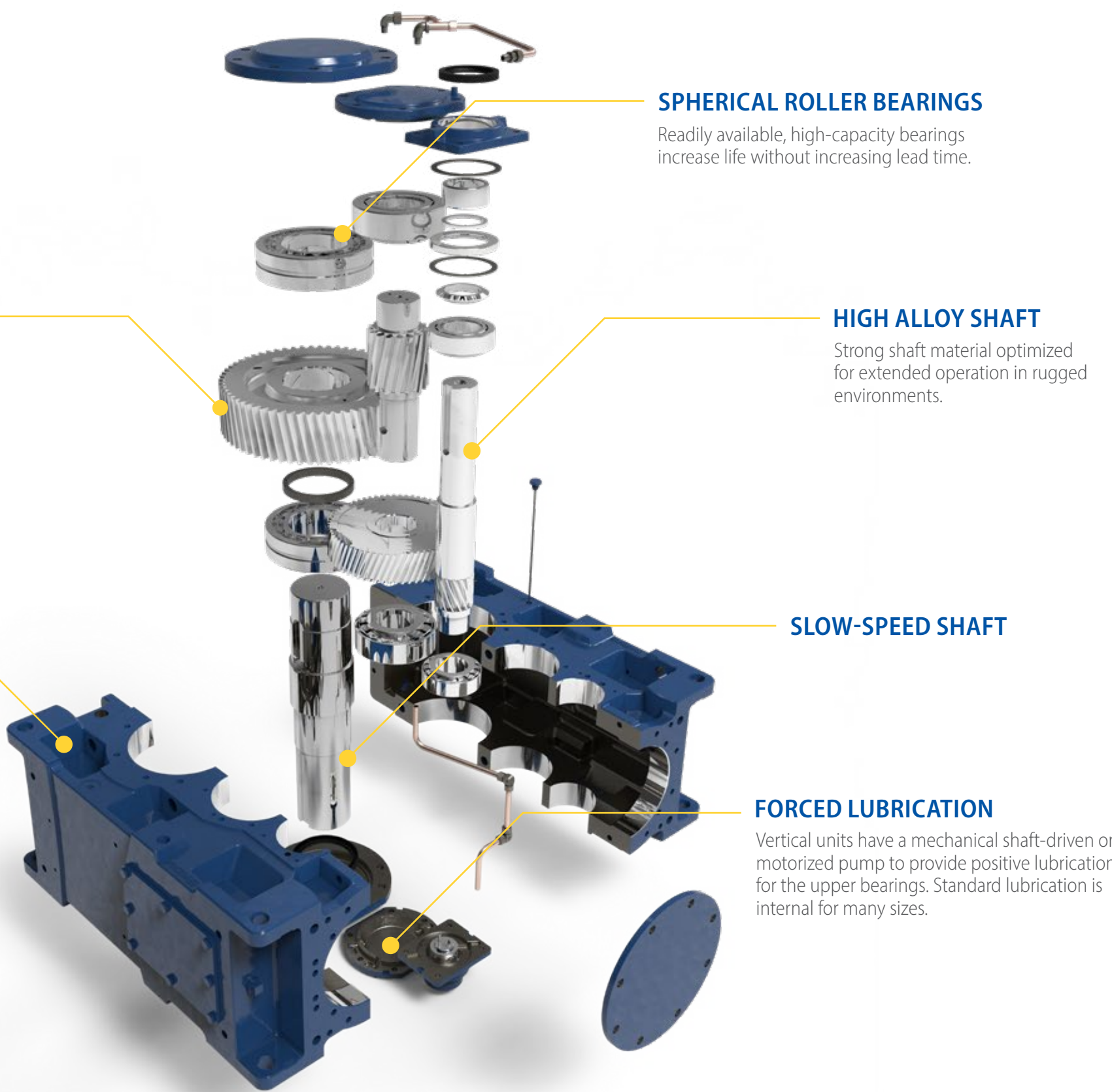
DIAMETER
58 mm to 360 mm
(Hollow & Solid)



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



RATIO RANGE
Up to 500:1
Standard



SPHERICAL ROLLER BEARINGS

Readily available, high-capacity bearings increase life without increasing lead time.

HIGH ALLOY SHAFT

Strong shaft material optimized for extended operation in rugged environments.

SLOW-SPEED SHAFT

FORCED LUBRICATION

Vertical units have a mechanical shaft-driven or motorized pump to provide positive lubrication for the upper bearings. Standard lubrication is internal for many sizes.

INDUSTRIES



Food & Beverage



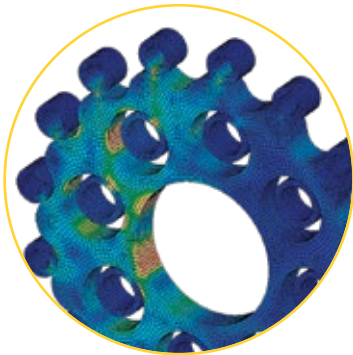
Wastewater



Plastics

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.



RING GEAR HOUSING

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



* Rating applies to specific products.

CYCLO® 6000 MIXER DRIVE

The revolutionary Cyclo® design is **remarkably efficient** at all ratios. We offer multiple output flange styles and extended base designs. **Oil leaks are eliminated** by a combination of dual output seals with seal collars and grease lubrication or shaft-driven lubrication pumps.

The extremely compact design minimizes space requirements while providing the capability to **resist the bending loads** inherent to mixing applications.

SPECS



HP RATING
Up to 200 HP
(150 kW)



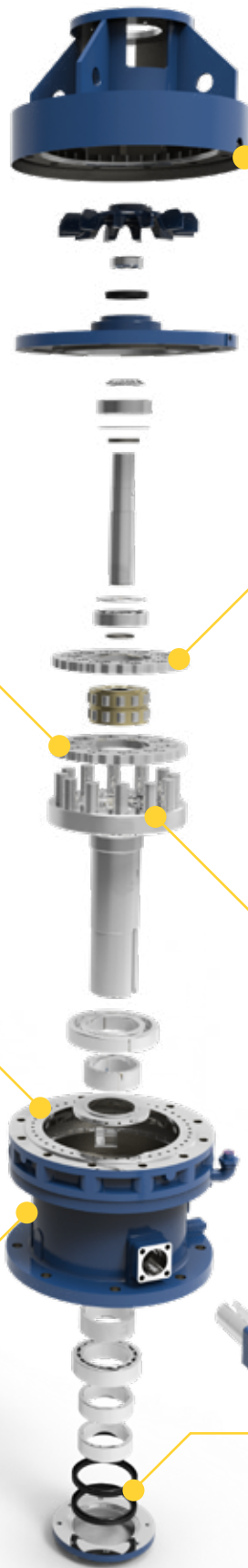
DIAMETER
Up to 7.5 in
(190 mm)



TORQUE
Up to 383,000 lb•in
(42,273 N•m)



RATIO RANGE
Up to 119:1 (Single)
Up to 7,569:1 (Double)
Up to 658,503:1 (Triple)



C-FACE MOTOR ADAPTER

Fabricated steel with a wide variety of input options available.

CYCLO® DISC

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

SLOW-SPEED SHAFT

LUBRICATION PUMP

Ensures lubricant gets all the way to the top bearings and minimizes the amount of oil required to maximize the unit's life.

TANDEM SEALS

Wear sleeves and pressure-rated seals to prevent leaks.

HOUSING

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

INDUSTRIES



Cosmetics



Chemical



Pharmaceutical

DUCTILE IRON HOUSING

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

DRYWELL ASSEMBLY

An optional additional protection against oil leaks, as the output bearings are grease lubricated.

TAPERED BEARINGS

Simultaneously resists axial and radial loads.

TANDEM DUAL LIP SEALS

Prevent leaks and exclude contaminants.

SINGLE-PIECE PINION

Built to handle 300% momentary shock loads, the oversized, single-piece pinion delivers maximum strength and reliability. Proudly designed and manufactured in the USA.

100% HARDENED STEEL COMPONENTS

Delivers extended service life, smooth operation, and exceptional strength.

BEARING

CYCLO® DISC

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

HIGH-SPEED SHAFT



* Rating applies to specific products.

CYCLO® BEVEL BUDDYBOX® 4

The **power-dense** Cyclo® Bevel BuddyBox® 4 is a robust, state-of-the-art, mid-sized family of right-angle gearboxes. Robust tapered output bearings and tandem output seals yield **efficient and reliable** mixer drives.

Cyclo® technology, integrated into innovative products, generates the **most complete range** of solutions available.

SPECS



HP RATING
Up to 60 HP
(45 kW)



DIAMETER
Up to 4.75 inch
(130 mm) (Solid)
Up to 4.25 inch
(120 mm)
(Key Hollowed)



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



RATIO RANGE
Up to 26,000:1
and greater

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 make it perfect for marine and elevator applications.

- 200% Overload for 4 Seconds

- 98% Efficiency

- Integral Brake Transistor

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 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

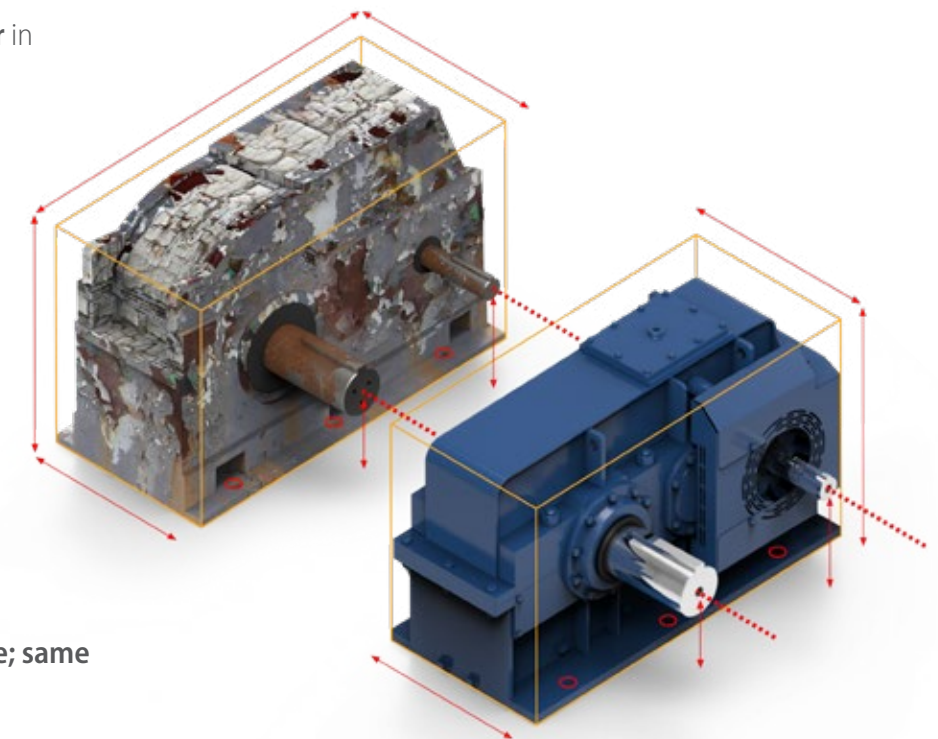
Match Existing Unit's Critical Dimensions

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!

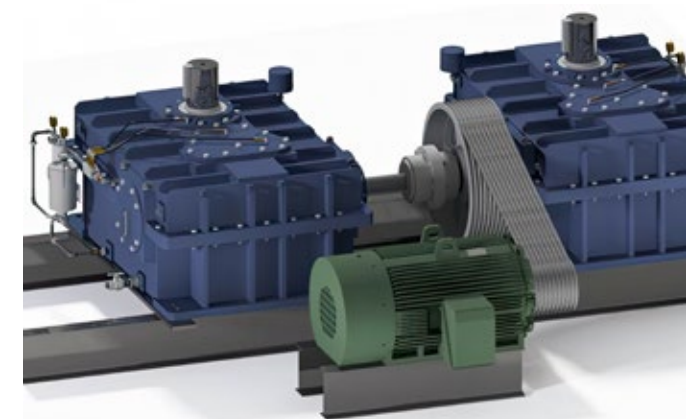
This product will literally drop-in to place; same footprint, same shaft positions!



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 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 will help in the consistent collection of data. For Vibration analysis, as well as oil condition 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: Hydrosopic 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

