



[www.sumitomodrive.com/mining](http://www.sumitomodrive.com/mining)



# Mining Industry

*Reliable Power Transmission Drives*



**Sumitomo Drive Technologies**

Sumitomo, Hansen and Seisa. Three companies, one global power transmission solutions provider. Sumitomo Drive Technologies has facilities strategically located throughout the world, providing comprehensive products and services in your region.





# Powerful and Rugged.

## Toughest Drive Solutions for All Mining Applications



### The mining industry places heavy demands on power transmission drives.

Sumitomo Machinery Corporation of America, part of Sumitomo Drive Technologies, is an industry leader in drive solutions that are utilized throughout mines worldwide. Our products provide strength, power, and performance in the face of tough operating conditions, high shock loads, and corrosive environments that take heavy tolls on the equipment that keeps your operation moving.

With installations worldwide, Sumitomo is recognized as a global leader in power transmission knowledge and innovation. The unmatched strength of our combined product range and experience establishes us as the premiere power transmission solutions provider.

Our products are the preferred choice of some of the largest companies in the coal mining industry. Whatever your application, we understand the unique challenges you face. We have solutions that deliver the lowest possible life-cycle cost and highest level of performance.

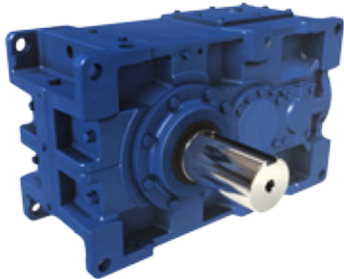
#### Hansen P4 Multi Stage



The performance of both parallel and right-angle Hansen P4 Multi Stage gear units is characterized by low noise and weight, extreme environmental tolerance and exceptional reliability.

|                       |   |
|-----------------------|---|
| <b>Sizes:</b>         | 19 sizes  |
| <b>Torque Rating:</b> | Up to 10 million lb•in<br>(1,129,848 N•m)   |
| <b>Power Rating:</b>  | 135 HP to 5,364 HP<br>(100 kW - 4,000 kW)   |
| <b>Ratio Range:</b>   | 6.3:1 to 630:1  |
| <b>Housing:</b>       | Dedicated Vertical & Horizontal Housings<br>Nodular (or ductile) & Cast Iron<br>Split Housing |

#### Paramax® 9000 Series



The Paramax® 9000 is distinguished by its robust and versatile design. Both parallel and right angle Paramax® offer reliability and long service life, even in tough operating conditions.

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| <b>Sizes:</b>         | 26 sizes  |
| <b>Torque Rating:</b> | 23,000 to 5,000,000 lb•in<br>(2,600 - 564,925 N•m)  |
| <b>Power Rating:</b>  | 5 to 5,000 HP<br>(3.7 kW - 3,729 kW)  |
| <b>Ratio Range:</b>   | 6.3:1 to 500:1  |
| <b>Housing:</b>       | Cast Iron (Standard)<br>Ductile & Fabricated Steel (Optional)<br>Monoblock or Split Housing |

#### Hansen P4 Single Stage



Hansen P4 single-stage gear units come in a parallel horizontal configuration, with shafts interchangeably sharing a horizontal or vertical plane.

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| <b>Sizes:</b>         | 8 sizes   |
| <b>Torque Rating:</b> | 33,807 to 1,171,357 lb•in<br>(3,820 - 132,345 N•m)            |
| <b>Power Rating:</b>  | 375 to 14,080 HP<br>(280 kW - 10,500 kW)                      |
| <b>Ratio Range:</b>   | 1.25:1 to 5.6:1<br>Custom ratios within 1% of requested value |
| <b>Housing:</b>       | Monoblock or Split Housing<br>Horizontal or Vertical          |

#### Hansen P4 UniMiner



The Hansen P4 UniMiner has a flippable housing that enables right and left shaft configurations by simply rotating or inverting the unit. Oil levels and circulation are designed for 3-degree tilting in any direction. With the introduction of the new Hansen P4 UniMiner Z Series, this product line now includes two larger frame sizes.

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| <b>Sizes:</b>         | 7 sizes  |
| <b>Torque Rating:</b> | 122,000 to 889,000 lb•in<br>(13,784 - 100,445 N•m)                         |
| <b>Power Rating:</b>  | 227 to 2,330 HP (170 kW - 1,738 kW)  |
| <b>Ratio Range:</b>   | 8:1 to 71:1  |
| <b>Housing:</b>       | Universal-Split<br>Flippable Universal<br>Nodular (or ductile) & Cast Iron |

#### SEISA®



SEISA® offers extra-large conveyor drives to meet your specifications. These custom gearboxes are available in parallel and right-angle shaft configurations. SEISA gearboxes utilize the rugged power of spiral bevel and helical gearing components.

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| <b>Sizes:</b>         | 5 standard sizes (other sizes available)          |
| <b>Torque Rating:</b> | 3,151,250 lb•in (356,040 N•m) and higher          |
| <b>Power Rating:</b>  | standard 675 to 18,800 HP<br>(500 kW - 14,029 kW) |
| <b>Ratio Range:</b>   | 8:1 to 90:1 (other ratios available)              |
| <b>Housing:</b>       | Fabricated Steel-Horizontal Split                 |





# Surface and Underground Conveyors

Our Conveyor Drive Packages Offer Durability and Power Both Above and Under Ground

Efficient and productive mining operations require conveyors and other equipment designed to meet ever-increasing demands.

Efficient and productive mining operations require conveyors and other equipment designed to meet ever-increasing demands. We offer tough, reliable gear drives designed to withstand the severe shock loads and harsh environments of every mining application. These include:

- Belt Feeders
- Bucket Wheel Excavators
- Feeder Breakers
- Wire Rope / Cable Winches
- Screw Conveyors
- Driers
- Grinders
- Kilns
- Pulverizers
- Water Treatment
- Thickner
- Ball Mill
- SAG Mill
- Stacker Reclaimers

## Application Spotlight: Conveyors

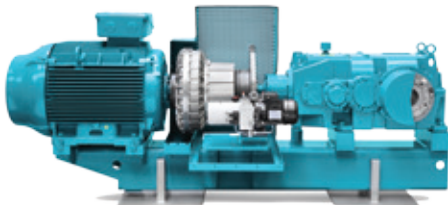
Conveyors come in a wide variety of configurations and specifications. Sumitomo has gearbox and gearmotor combinations suitable for most applications, whether it be shaft mounted, right-angle, high speed or positional accuracy.

From the fractional power of Cyclo® BuddyBox® products, to the large Paramax® 9000, Seisa and Hansen P4 Series, we have a wide range of configurations and powers to meet your requirements.

## Conveyor Drive Packages

Paramax® and Hansen P4 Series can be delivered with fabricated steel baseplate, swing base or motor adapter. Packages complete with couplings, brakes, flywheels and backstops can be integral or external to the gearbox.

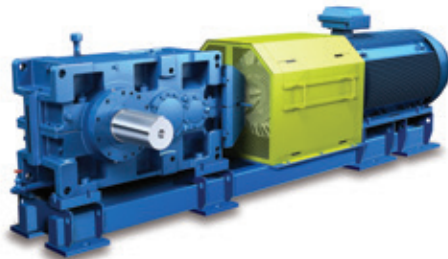
Low speed connection to the pulley shaft by hollow bore with shrink disc or rigid coupling connection.



Hansen P4 - Alignment Free



Paramax® 9000 - Swingbase



Paramax® 9000 - Baseplate



## Travel Drives

Travel Drive applications require multiple mounting configurations within a limited space. Paramax® 9000 Series, Hansen P4 Series, Cyclo® HBB, and Cyclo® BBB are also optimized for applications with limited space above the rail.

From stacker reclaimers to continuous barge loaders, our products are manufactured to fit your travel drive application.



## Bucket Elevators

Compact, torque-dense, and high-strength drives, the Paramax® 9000 and Hansen P4 Series are ideal for your bucket elevator requirements.

Accessories include integral heavy-duty backstop, and hollow low-speed shaft with a shrink disc for positive torque transmission.

For a total drive package, we can provide a hydraulic coupling, disc brakes and all components mounted to a fabricated steel swingbase.



## Sizer

Heavy duty severe sizer or crusher applications require effective sizing and accessories to meet this demanding operation.

The Paramax® 9000 and Hansen P4 Series can be delivered in multiple housing materials, cast iron, ductile iron or fabricated steel.

With vast experience in developing motor adapter styles and driven shaft arrangements, we offer products to fit in your limited space constraints.

## Hansen P4 UniMiner for Conveyor Applications

The Hansen P4 UniMiner and new Hansen P4 UniMiner Z Series are specifically designed for the mining industry.

The housing design is robust for the application and offers versatility for different mounting positions. With a “flippable” housing and horizontal split line, the UniMiner series is the ideal solution for alignment-free drive packages.





# Compact and Reliable.

Choose Sumitomo for Reliable, Durable and Efficient Gearboxes with Long Life Cycles and Low Maintenance

Sumitomo's unique Cyclo® technology offers quiet, efficient and reliable operation with high torque density and compact size.

Cycloidal "Gearless" Speed Reduction

Torque transmitting parts roll, rather than grind, providing quiet, efficient and reliable performance.

Superior Materials

52100 bearing grade steel rotating components, hardened to 58 Rockwell C for unmatched durability and reliability.

Long Life and High Shock Load Capacity

The Cyclo® input has two-thirds of its reduction components in contact at all times, resulting in exceptionally rugged, shock resistant performance.

Product Support

Sumitomo's Product Support offers scheduled repair services as a one-stop-shop for all your related gearbox needs. For emergency repairs, we offer a 24 to 72-hour turnaround. Please consult your representative for product eligibility.

Cyclo® 6000 Series



Sumitomo's Cyclo® 6000 speed reducer and gearmotors provide quiet, efficient and reliable performance. With over 500% momentary shock load capacity, Cyclo® is ideal for any of your mining applications.

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| Sizes:         | 23 sizes   |
| Torque Rating: | 55 to 603,000 lb•in<br>(6.2 - 68,130 N•m)  |
| Power Rating:  | 1/10 to 235 HP<br>(.1 kW - 175 kW)   |
| Ratio Range:   | 3:1 to 119:1 (single)<br>121:1 to 7,569:1 (double)<br>8041:1 to 658,503:1 (triple) |
| Housing:       | Cast Iron  |

Cyclo® Bevel BuddyBox® 4 Series



The Cyclo® Bevel BuddyBox® (Cyclo® BBB) 4 Series combines the advantages of the Cyclo® drive with bevel gears to yield a high torque range in a right-angle shaft configuration. This yields an extremely robust design with high overload reserves.

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| Sizes:         | 6 sizes                                      |
| Torque Rating: | 2,000 to 118,590 lb•in<br>(225 - 13,400 N•m) |
| Power Rating:  | 1/8 to 100 HP<br>(.1 kW - 75 kW)             |
| Ratio Range:   | 11:1 to 26,000 and greater                   |
| Housing:       | Ductile Iron                                 |

Cyclo® Helical BuddyBox®



Cyclo® Helical BuddyBox® (Cyclo® HBB) drives combine the advantages of the Cyclo® with helical gears to yield a high torque range in an offset parallel configuration.

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| Sizes:         | 6 sizes                                    |
| Torque Rating: | 920 to 102,375 lb•in<br>(104 - 11,566 N•m) |
| Power Rating:  | 1/4 to 300 HP<br>(.2 kW - 225 kW)          |
| Ratio Range:   | 5:1 to 14:1<br>20:1 to 25:1                |
| Housing:       | Cast Iron                                  |

Helical Shaft Mount (HSM)



Helical Shaft Mount (HSM) drives offer high performance. The helical gears feature carburized teeth at a 25° pressure angle and wide gearfaces, enabling high-efficiency torque output and maximum ratings for shaft-mount configurations.

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| Sizes:         | AGMA 107 to 608                                    |
| Torque Rating: | 3,900 lb•in to 388,884 lb•in<br>(440 - 43,938 N•m) |
| Power Rating:  | 1/4 to 300 HP<br>(.2 kW - 225 kW)                  |
| Ratio Range:   | 5:1, 14:1, 20:1, 25:1                              |
| Housing:       | Cast Iron  |

Inching and Creep Drive Capabilities



Both the Paramax® 9000 Series and the Hansen P4 Series offer options to incorporate an inching or creep drive designed to handle your full load operational needs.

Our standard Cyclo® or Cyclo® BBB products are mounted to the industrial gearbox to achieve slow operational speeds.

An overrunning clutch engages to achieve the slow speeds required for maintenance or inspection, and disengages for normal operating speeds.

Conveyors subject to harsh weather conditions with intermittent operation can benefit from using inching or creep drives.

Inching and creep drives are sized to maximize the performance of your driven equipment.



Product Configurator: [www.sumitomodrive.com/Configurator](http://www.sumitomodrive.com/Configurator)

Sumitomo Drive Technologies' online product Configurator streamlines the selection process, enabling you to build **our power transmission products for your specific application.**

Configure your Sumitomo Drive Technologies products today at [www.sumitomodrive.com/Configurator](http://www.sumitomodrive.com/Configurator)

