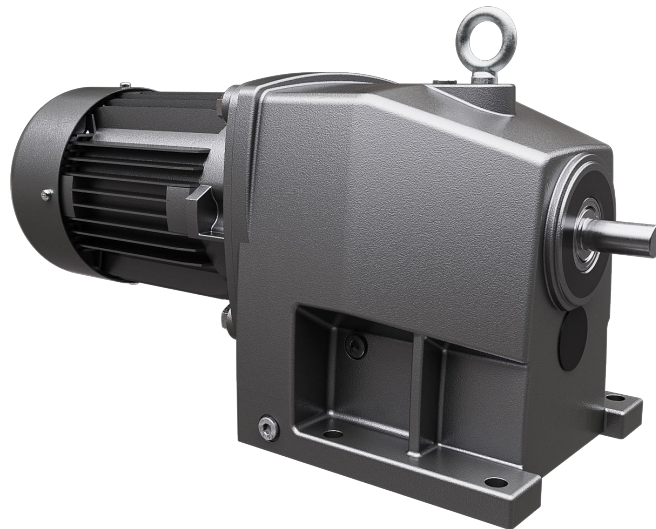


REPLACEMENT & AFTERMARKET

HELICAL INLINE DRIVES



Collaborate / Create / Convey

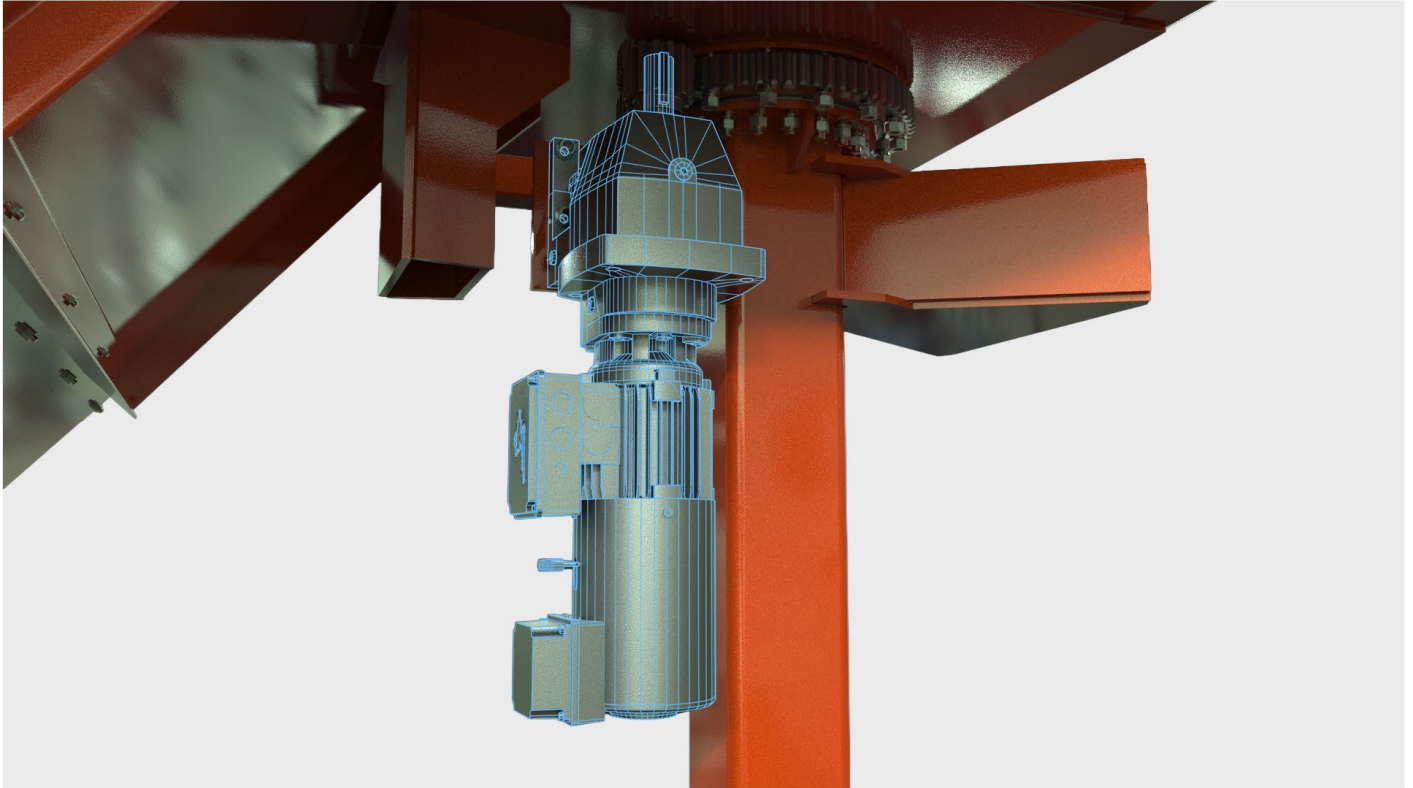
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HELICAL INLINE DRIVES



Helical Inline Drives

Helical inline drives reduce motor speed and multiply torque for belt and roller chain conveyors, positioning the output shaft coaxially with the input shaft on a single centerline. Conveyor drive stations run continuous duty under dust, vibration, and moderate shock loading, conditions that push undersized or worn reducers into overheating, seal degradation, and bearing failure. A failed drive stops the entire line, and every hour of unplanned downtime compounds into lost throughput and emergency labor cost.

Each drive pairs case-hardened steel helical gear sets with a torsionally rigid one-piece housing, machined so that all bearing seats hold alignment under full load. Angled gear teeth mesh gradually rather than engaging all at once, holding transmission efficiency at 95% – 98% while keeping operating noise low. Units are supplied in shaft-mounted, flange-mounted, and foot-mounted configurations covering 0.16 – 200 HP, and every replacement is cross-referenced against nameplate data to match the mounting pattern, ratio, and torque rating of the unit it replaces.

APPLICATIONS



Recycling & Material Recovery

Sortation lines and shredder discharge conveyors in recycling facilities run continuously under moderate shock loading from irregular, abrasive material streams. Helical inline drives absorb these load fluctuations through gradual gear tooth engagement while the compact coaxial package fits the tight drive frames common in MRF layouts.



Waste Management

Transfer stations and processing conveyors operate in heavy airborne dust with minimal maintenance windows. IP55-rated housings seal the gear train against dust ingress while sustaining continuous-duty cycles between service intervals.



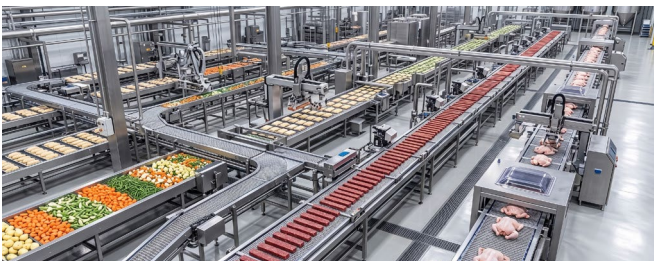
Manufacturing

Production lines run adjacent to workstations where sustained gear whine violates plant noise limits. Gradual helical tooth mesh cuts operating noise at the source, holding drive stations within acceptable sound levels.



Distribution & Warehousing

Sortation and accumulation conveyors demand around-the-clock operation inside dense rack layouts with limited horizontal clearance. The coaxial shaft arrangement shortens the overall drive package to fit where parallel shaft units will not.



Food Processing

Processing and packaging conveyors undergo frequent washdown with water jets and cleaning chemicals. Smooth-surface housings with IP66 and IP69K sealing withstand direct spray, with NSF H1 food-grade lubricants available for incidental contact zones.



Bulk Material Handling

Aggregate, cement, and grain conveyors expose drives to abrasive dust and outdoor temperature swings. Corrosion-protected housings and synthetic lubricants extend the operating window to -40°F in northern climates.

KEY FEATURES

01

Case-Hardened Helical Gear Sets:

Angled gear teeth cut from wear-resistant, case-hardened steel mesh gradually across the tooth face, transmitting torque at 95% – 98% efficiency with low operating noise.

02

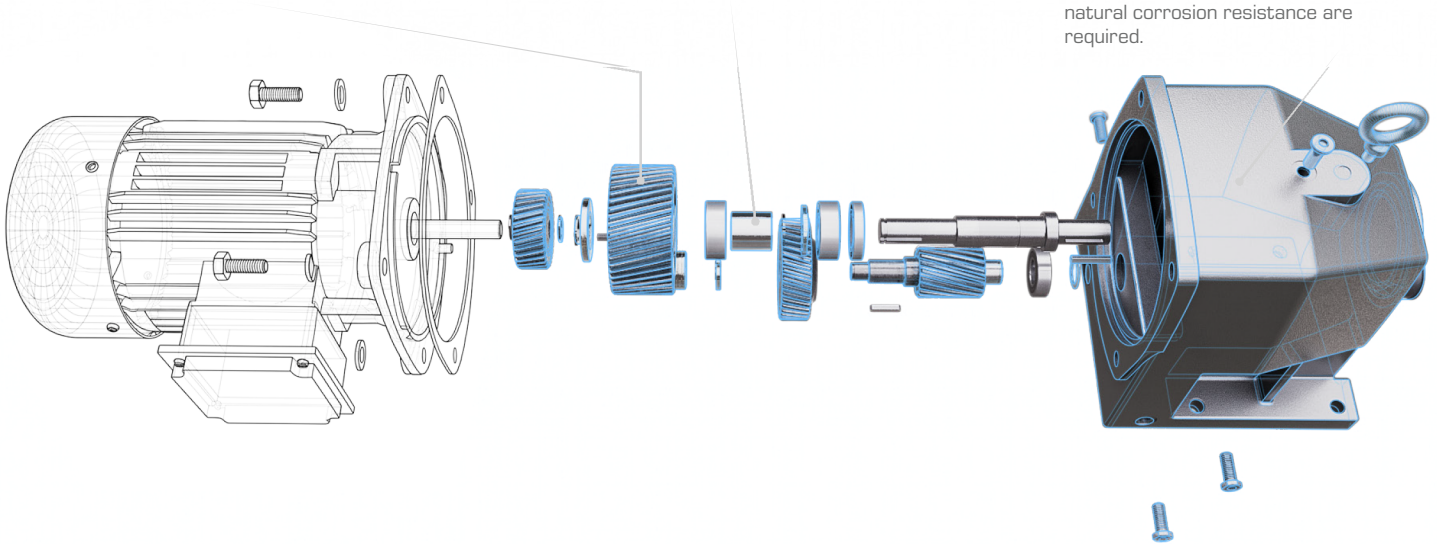
Coaxial Shaft Arrangement:

Input and output shafts align on a single centerline, shortening the overall drive package to fit conveyor frames where horizontal space is limited.

03

One-Piece Cast Iron Housing:

A single torsionally rigid casting carries all bearing seats, holding gear alignment under torque loads up to 205,000 lb-in; die-cast aluminum housings are available where low weight and natural corrosion resistance are required.



04

Sealed Terminal Box:

A gasketed enclosure isolates motor wiring connections from dust and washdown spray in IP66 and IP69K builds.

05

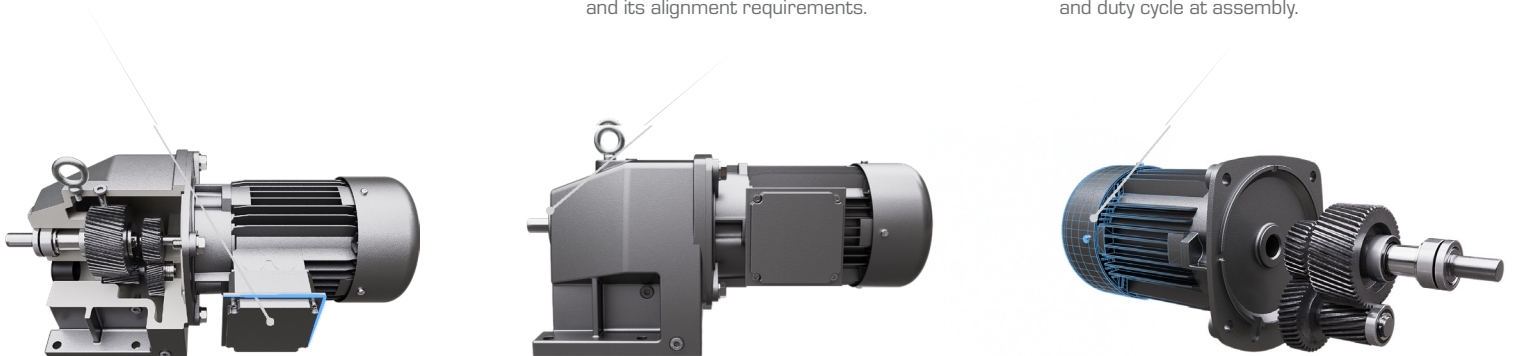
Hollow-Bore Output Shaft:

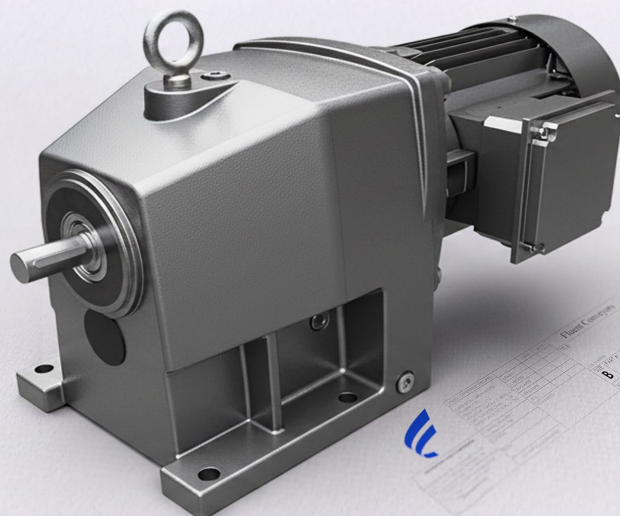
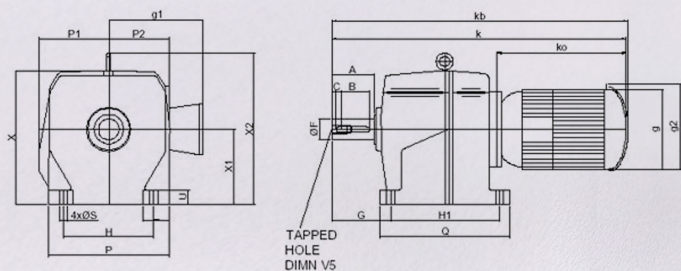
The hollow bore slides directly onto the conveyor drive shaft in shaft-mounted configurations, eliminating the external coupling and its alignment requirements.

06

Factory-Installed Motor Brake:

A spring-set brake mounted at the motor fan end holds the conveyor stationary on shutdown and is matched to unit torque and duty cycle at assembly.





HELICAL INLINE DRIVES

SPECIFICATIONS

Parameter	Specification
Torque range	88 – 205,000 lb-in
Power range	0.16 – 200 HP
Gear efficiency	95% – 98%
Gear ratio range	3.5:1 to 200:1+
Gear stages	Two- or three-stage reduction
Motor voltage	230/460V three-phase standard
Motor type	Three-phase asynchronous (induction) standard
Environmental rating	IP55 standard; IP66 and IP69K available
Housing material	Cast iron; die-cast aluminum available
Mounting options	Shaft mount, foot mount, flange mount, foot/flange combination
Temperature range	-13°F to 104°F standard (-25°C to 40°C)
Extended temperature	-40°F to 150°F with synthetic lubricants
Special options	Washdown duty, explosion-proof, motor brake, encoder, sealed terminal box, thermostat, VFD-ready

Note: For torque requirements above 205,000 lb-in, specify a parallel shaft drive. Contact engineering for replacement parts outside the listed specifications.

HELICAL INLINE DRIVES SPECIFICATIONS

Environmental Rating Selection

Rating	Protection Level	Best For
IP55	Dust protection and low-pressure water jets	Indoor conveyors with moderate dust: waste management, manufacturing, material handling
IP66	Complete dust sealing and powerful water jet protection	Outdoor installations, washdown environments, food processing
IP69K	High-pressure, high-temperature steam cleaning above 1,000 PSI	Sanitary pharmaceutical and food processing with daily or shift-by-shift pressure washing

Mounting Configuration

Configuration	Drive Connection	Best For
Shaft mount	Hollow-bore output shaft on drive shaft, torque arm restrained	Most common configuration; eliminates couplings and simplifies alignment
Flange mount	B14 or B5 flange bolted to equipment housing	Vertical or angular mounting; OEM equipment integration
Foot mount	Solid output shaft with external coupling	Maintenance flexibility; motor replacement without gearbox removal

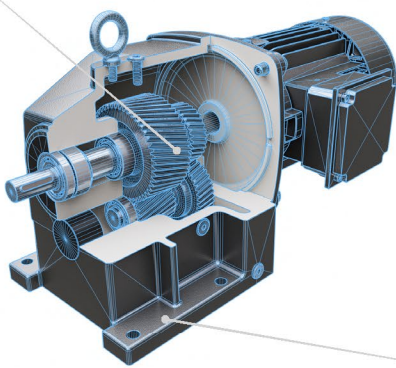
Note: Foot-mounted installations require precision alignment within 0.002" parallel offset for flexible couplings.

THE ENGINEERING ADVANTAGE

This section outlines the gear reduction architecture and housing fabrication methodology behind helical inline drives, covering single-piece machining, surface protection, and lubrication engineering to ensure drop-in fit and extended service intervals.

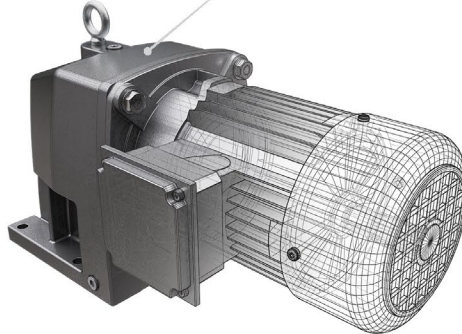
Two- and Three-Stage Gear Reduction:

Ratio requirements from 3.5:1 to beyond 200:1 are built from staged helical gear pairs, distributing reduction across stages to keep tooth loading within case-hardened steel limits.



Single-Piece Housing Machining:

All bearing seats are machined into one casting in a single setup, removing the bolted joints and split lines that allow shaft misalignment under torsional load.



Non-Flaking Surface Conversion Treatment:

A surface treatment bonds into the aluminum housing rather than coating over it, so protection cannot flake away under washdown chemicals the way conventional paint does; epoxy and polyurethane coatings protect cast iron housings in corrosive environments.

Ingress Protection Sealing System:

Shaft seals, gasketed joints, and sealed terminal enclosures are specified as a matched system to hold the rated IP class at every housing penetration.



Synthetic Lubricant Formulation:

Synthetic oils extend the operating temperature window to -40°F – 150°F and stretch change intervals to 8,000 – 15,000 operating hours, with NSF H1 food-grade formulations certified for incidental food contact.

CONTACT INFORMATION

OUR ENGINEERS WILL SPEC THE EXACT PART FOR YOUR SYSTEM

For product specifications, engineering support, or order inquiries, please contact our team using the information provided below. Our specialists are available to ensure accurate recommendations and efficient service for your application requirements.

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