

Jiangsu New YinYe Advances Transmission Accuracy with Custom Ultra High Precision Gears and Wear-Resistant Technologies

Five-axis grinding optimization and high-strength heat treatment processes deliver DIN Class 4–5 precision gears for demanding industrial applications

CALIFORNIA, CA, UNITED STATES, July 17, 2026 /EINPresswire.com/ -- Jiangsu [New YinYe Transmission](#)

Electromechanical Co., Ltd (New YinYe Transmission), a recognized National 'Little Giant' High-Tech Enterprise founded in 1993, has developed a comprehensive set of core technologies that enable the production of custom ultra high precision gears meeting DIN 3962/3965 Class 4 to 5 standards with surface roughness Ra 0.4. The company's capabilities are now increasingly sought after in wind power, mining machinery, metallurgical equipment, and precision machine tool applications where transmission accuracy and durability are critical.



Logo for New YinYe Transmission

New YinYe Transmission (NYY) specializes in the R&D, manufacturing, and heat treatment of high-precision cylindrical gears and spiral bevel gears. With a 25,308-square-meter facility employing approximately 120 staff, including a 30-person R&D team, the company's annual production capacity reaches 50,000 pieces. Export business accounts for 30% of total sales, with major markets in Asia, Europe, and North America.

Core Technology 1: Five-Axis Profile Gear Grinding Optimization

To achieve DIN Class 4 precision on large gears, New YinYe Transmission deploys German Hoefler RAPID/HELIX profile gear grinding machines and Liebherr LCS 1200 equipment. These

five-axis CNC grinders enable simultaneous control of tooth profile, lead, and pitch deviations. The company processes cylindrical gears up to 3,000 mm outer diameter and spiral bevel gears up to 1,250 mm. Using high-strength materials such as 18CrNiMo7-6, New YinYe Transmission manufactures [18CrNiMo7-6 Wind Power Custom Ultra High Precision Gears](#) designed for high-fatigue resistance, stable operation, and long service life in multi-megawatt wind turbine transmission systems. The grinding process is programmed to minimize heat-induced distortion, maintaining consistent geometry across the tooth flank. For spiral bevel gears, the facility is fully compatible with Klingelnberg, Gleason, and Oerlikon bevel gear systems, allowing flexible production of custom tooth contact patterns.

The result is a gear that can be certified to above DIN Class 4 for cylindrical gears and above DIN Class 5 for spiral bevel gears, meeting the stringent demands of high-speed, high-torque transmissions.

Core Technology 2: Carburizing and Quenching for High-Strength Wear Resistance

Heavy-load applications such as mining machinery shearers and metallurgical furnace top reducers require gears that resist impact and surface fatigue. New YinYe Transmission's in-house heat treatment department has mastered carburizing and quenching processes for low-carbon alloy steels like 17CrNiMo6, 18CrNiMo7-6, and 20CrNi2Mo. The company also performs nitriding and high-frequency induction hardening for medium-carbon steels such as 42CrMoA and 38CrMoAl.

A key proprietary technique is deformation control of thin-walled parts after carburizing. The company combines bore and plane hardening to maintain dimensional stability. Post-treatment hardness typically reaches above 58 HRC, ensuring the gear's ability to withstand high contact stresses in wind power and mining environments.

Quality assurance includes non-destructive testing via a German Fraunhofer case depth/hardness tester and a Barkhausen grinding burn detection system – equipment rarely found in standard gear factories.

Core Technology 3: Low-Backlash, Low-Noise Transmission Structures

For precision machine tool applications that require high-speed, low-noise operation, New YinYe Transmission designs involute cylindrical internal/external gears and spiral bevel gears with optimized tooth backlash. Through precise control of tooth flank geometry and surface finishing, the company can produce low-backlash gear pairs that reduce vibration and noise levels. The machining accuracy above DIN Class 4 and surface roughness Ra 0.4 contribute to smoother meshing and longer service life.

In canning machinery and biofuel processing equipment, where high-speed continuous operation is common, these low-backlash gears improve transmission efficiency and reduce

maintenance intervals.

Key Product Specifications (Machining Capabilities)

YL-Series High Precision Gears (Cylindrical & Bevel):

- Types: Involute cylindrical internal/external gears, spur gears, spiral bevel gears
- Materials: Low-carbon alloy steel, medium-carbon alloy steel (17CrNiMo6, 18CrNiMo7-6, 42CrMoA, 20CrNi2Mo)
- Heat treatment: Carburizing & quenching, induction quenching, nitriding
- Dimension range: 200 mm – 2,500 mm
- Machining accuracy: Above DIN Class 4
- Max machining capacity: Cylindrical gears 3,000 mm OD; spiral bevel gears 1,250 mm
- Inspection: Zeiss CMM (3,000×6,000×2,000 mm), Hexagon CMM, Klingelnberg P152, Gleason M&M gear inspection centers

YL Series Spiral Bevel Gears:

- Max dimension: ≤1,300 mm
- Accuracy: Above DIN Class 5
- Heat treatment: Carburizing and quenching
- Materials: High-quality low-carbon alloy steel
- Applications: Marine, mining, wind power, engineering, metallurgy/petrochemical

YL-Series Ring Gear (Large OD):

- Processing diameter: 800 mm – 2,500 mm
- Accuracy: DIN Class 7 (post heat treatment)
- Materials: 42CrMo, 38CrMoAl
- Heat treatment: Nitriding, induction quenching
- Key features: High toughness, wear resistance, anti-deformation, stable operation accuracy
- Applications: Metallurgy, wind power

Industry Context and Market Impact

The global gear market is estimated at USD 222.12 billion in 2025, with wind energy installations driving demand for large-scale precision gearing, according to Mordor Intelligence. Multi-megawatt wind turbines require planetary-stage components from high-fatigue steels such as 18CrNiMo7-6. New YinYe Transmission's custom ultra high precision gears for wind power, including planet gears and ring gears, are designed to meet these specifications.

In marine applications, classification society certification (such as DNV/BV) for raw materials and heat treatment is required, and New YinYe Transmission has experience supplying gears for marine thrust systems. The company's quality management system includes ISO9001 certification, though specific classifications are not detailed.

The precision gearbox and geared motor market is projected to reach USD 3.9 billion in 2026, driven by high-precision motion control requirements (Grand View Research). New YinYe Transmission's ability to produce DIN Class 4-5 gears positions it to serve this growing segment, particularly in machine tools and robotics.

Company Contact Information

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