

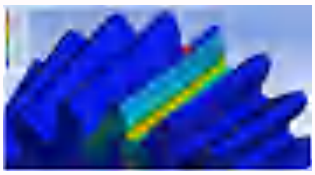
The input shaft is coupled to the motor via a collet-style clamping mechanism, dynamically balanced to ensure concentricity and zero-backlash power transmission under high-speed input rotation.



The reduction mechanism adopts a helical gear design, with a tooth contact ratio more than double that of standard spur gears. This results in smooth operation, low noise, high output torque, and low backlash.



The planetary gear meshing interface employs a full complement of cage-free needle rollers, expanding the contact area to enhance structural rigidity and output torque.



Gear strength is analyzed using ANSYS technology, while tooth profile and lead crowning modifications are applied to reduce vibration and noise, thereby extending the gear system's service life.



The gears are manufactured from high-quality alloy steel and undergo carbonitriding treatment to achieve optimal wear resistance and impact toughness.



The planet carrier and output shaft feature an integrated dual-support structural design to ensure maximum torsional rigidity.



The sun gear and input shaft employ an integrated structural design to ensure maximum torsional rigidity and zero-backlash power transmission at high input speeds.

