



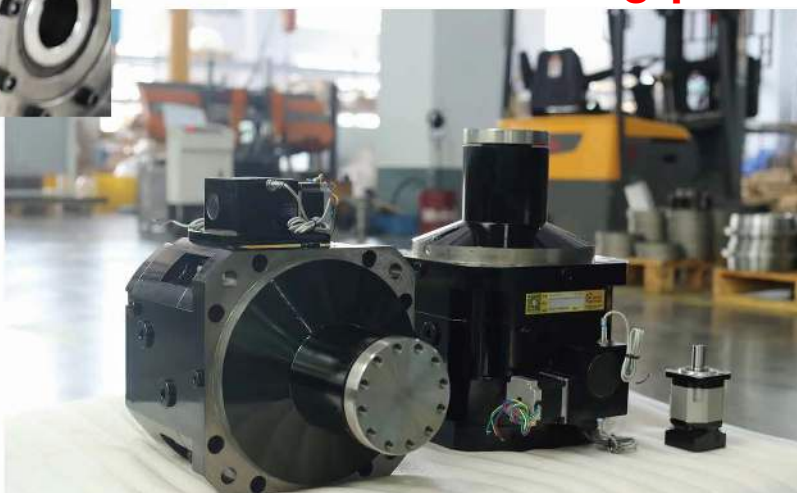
The Heavy Duty Division, a subsidiary of Newstart, focuses on the market application research and development of heavy-duty servo planetary reducers. The dual speed reducer solution for CNC machine tool spindle has achieved the bidirectional requirements of high torque and high speed in metal cutting processing.

More precise manufacturing processes, higher torque gear systems, more reliable stepper motor driven mechanical gear shifts, and more thoughtful customer service, we believe that all of these are the results you want.

Ratio	Nominal input speed	Maximum input speed	Nominal output torque	Maximum output torque	Motor shaft	Backlash	Noise	Reference weight
HG13 i=4	1500r/min	4000-6000r/min	2400Nm	3600Nm	≤φ60	≤20arcmin	≤88dB	90kg

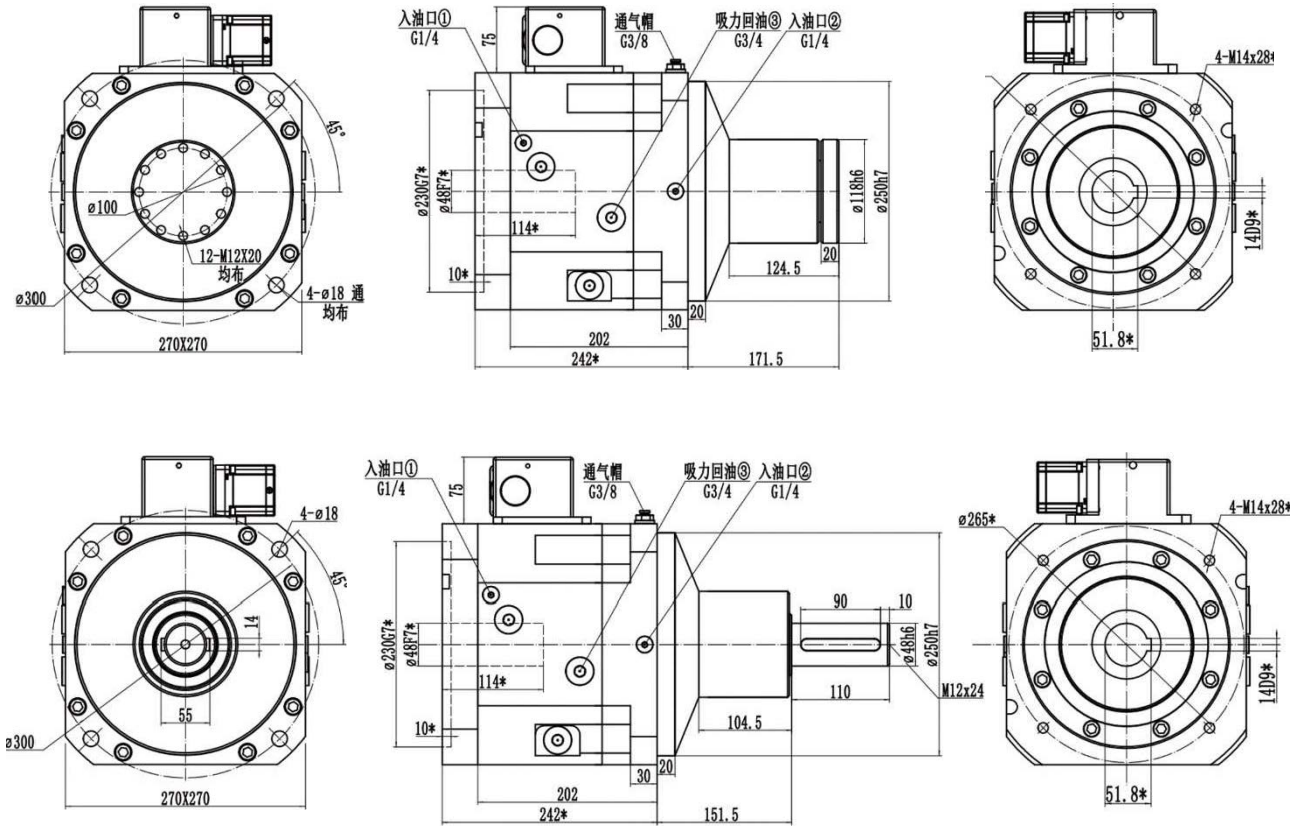


More torque
Adapt to more motors
More stable shifting power

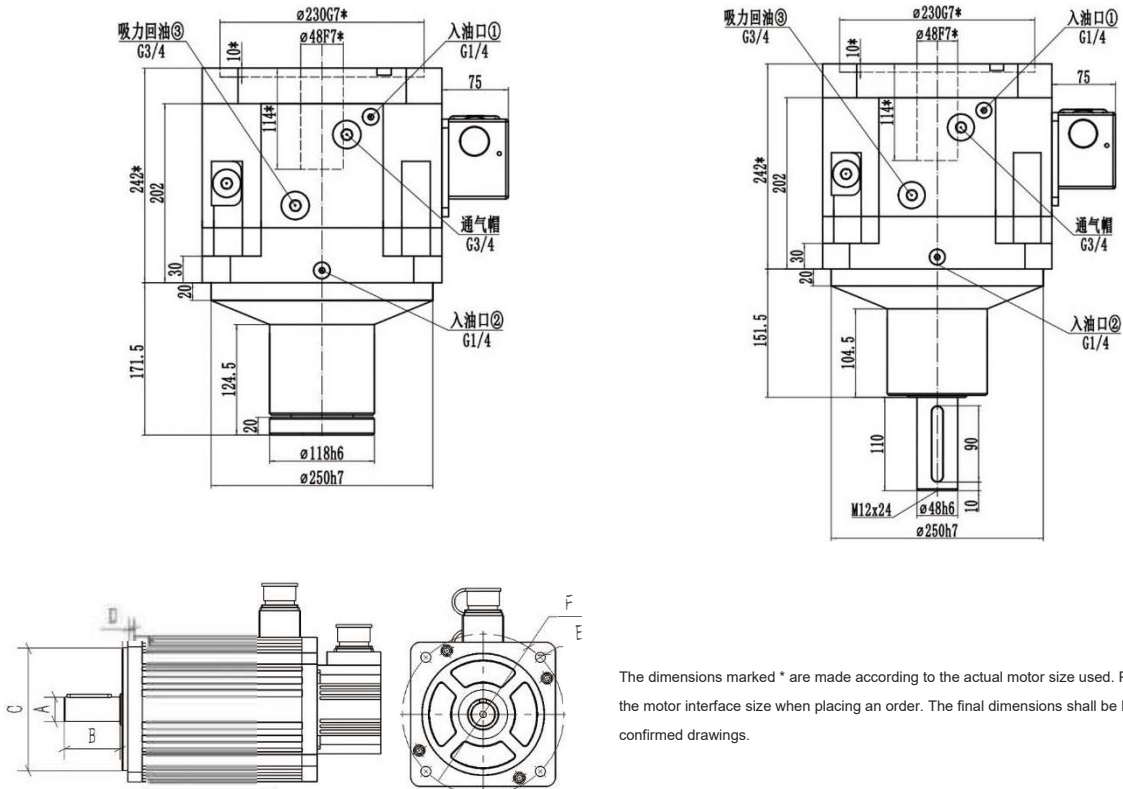


Intelligent 2 speed spindle gearbox Mounting drawing

Horizontal Mounting drawing



Vertical install drawing



The dimensions marked * are made according to the actual motor size used. Please inform us of the motor interface size when placing an order. The final dimensions shall be based on the confirmed drawings.

A. Splash lubrication

When the reducer is installed horizontally, the motor speed is less than 3000r/min, and intermittent operation occurs, splash lubrication can be attempted. At this point, ensure that the oil level reaches the oil mirror position and the lubricating oil viscosity is VG68. The specific temperature on the surface of the reducer during operation is less than 60 degrees Celsius.



B. Circulating lubrication

Lubrication and cooling play a crucial role in the performance of the gearbox.

If circulating lubrication is used, the oil tank, fan, or refrigeration unit can be connected according to the operating conditions to achieve cooling effect. The viscosity of lubricating oil is VG46 or 32. The specific surface temperature of the reducer shall be less than 60 °C

The oil inlet shown in Figure ①② The oil inlet shown in Figure 12 must be connected

The oil outlet in Figure ③ must be connected, with a diameter of 20mm for the oil pipe, and the return oil flow rate must be bigger than the total oil inlet volume

C The system must set up flow alarm and oil temperature alarm. If the circulating oil is abnormal, it is extremely easy to cause damage to the gearbox. Meanwhile, it is recommended to install filters in the oil circuit to keep the oil clean and the oil circuit unobstructed.

The fuel volume of the fuel tank is about 10 times the circulating volume, and it is recommended to be greater than or equal to ≥30L.

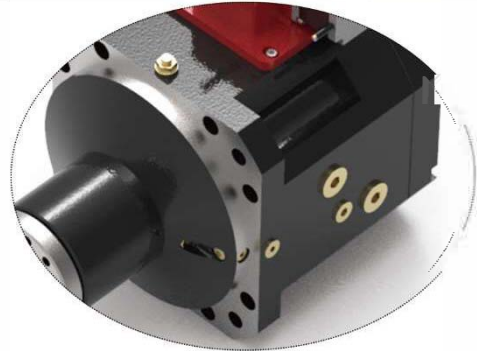
D

Please make sure to start the circulation first before starting the motor. The circulation system has been running normally before the gearbox starts running. It is strictly prohibited to operate the gearbox without lubrication.

E. The oil change interval is 5000 hours

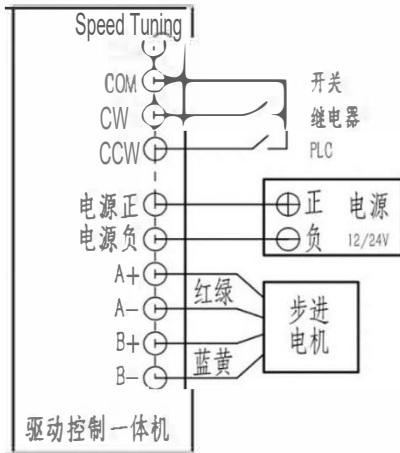
Step motor+Worm Gear+Pinion Rack

Perfect Shifting Power!



Wiring diagram of shift motor driver

The CW signal is for shifting to a lower gear, and the CCW signal is for shifting to a higher gear.



Original settings for shift motor

Original settings for driver

SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
ON	ON	OFF	ON	OFF	OFF	OFF	ON

The Original setting of the stepper motor speed is 380r/min

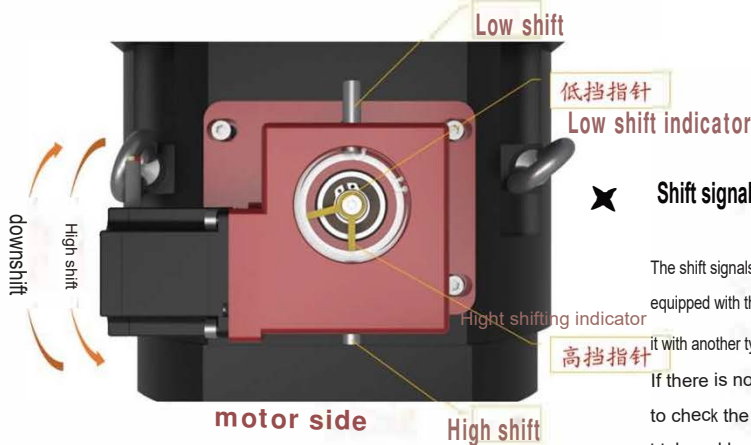
Notice

Reliable operating temperature of the driver <math>< 55^{\circ}\text{C}</math> ,

Shift motor operating temperature <math>< 80^{\circ}\text{C}</math> , pay attention to heat dissipation



Turn the screw clockwise to the bottom

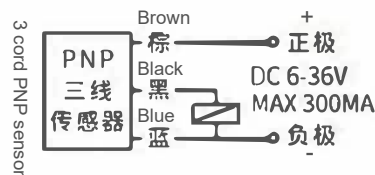


Shift signal switch

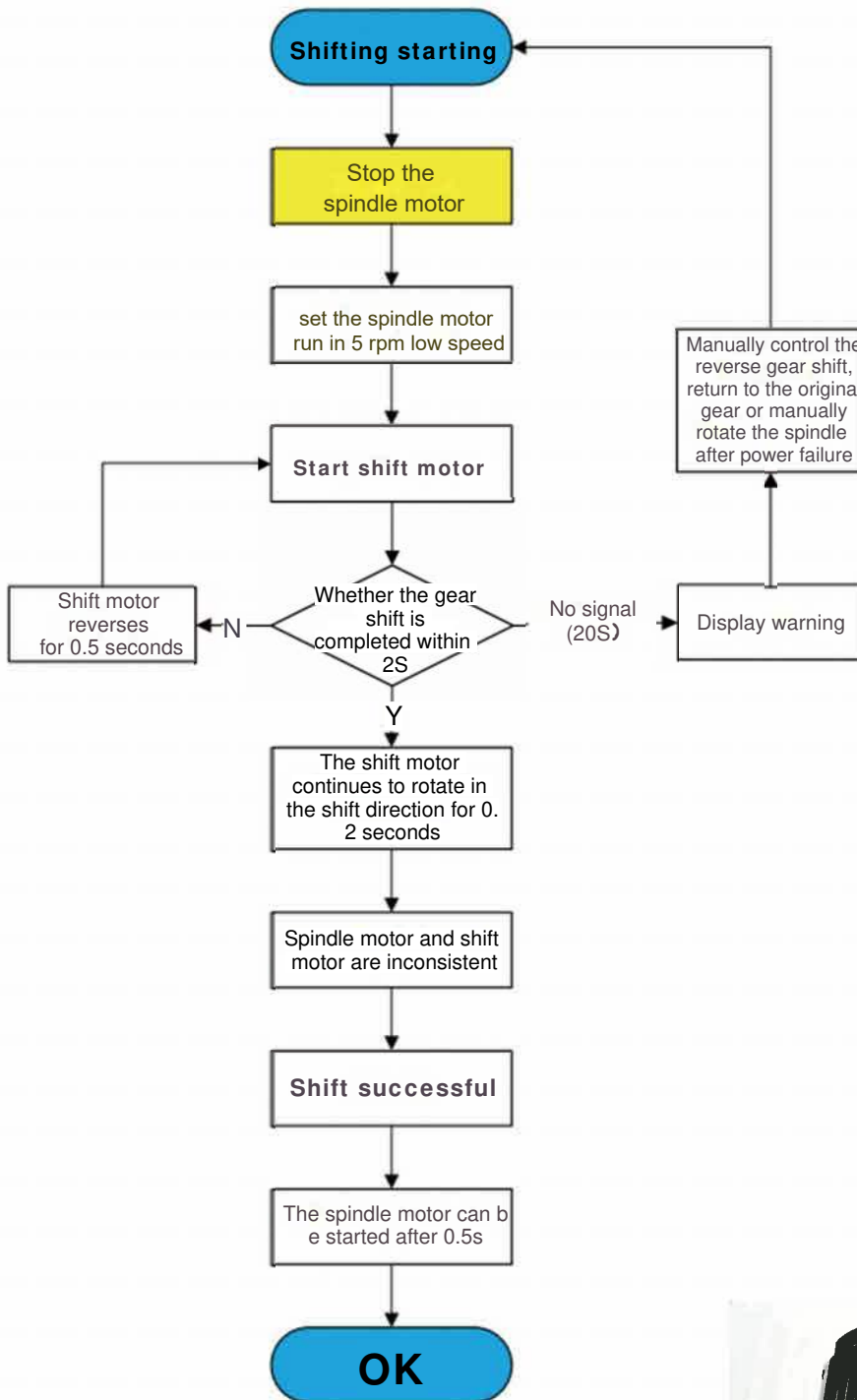
The shift signals for high and low gears use inductive Proximity switches, Standard equipped with three cord switch-on type PNP with M8x1 thread. If necessary please replace

it with another type by yourself

If there is no shifting signal during the work, firstly open the upper cover to check the position of the indicator and proximity switch. Ensure that the high and low shifting indicators can point towards the proximity switches, and the distance <math>< 2\text{mm}</math>.



Intelligent 2 speed spindle gearbox-Shifting logic



*Be sure to ensure that the reducer is in gear before running the spindle motor, otherwise it will easily cause the internal gear to break.

* Failure to shift gears within 20 seconds may be due to gear misalignment and jamming. You can manually turn the spindle and try again.

*After there is a signal in the gear position, the motor continues to rotate in the direction of the gear position and stops for 0.2 seconds. The purpose is to fully close the gear pointer and the proximity switch to avoid losing the gear signal due to backlash or gear clearance.

