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DESBOER | EXTREME AND WIN

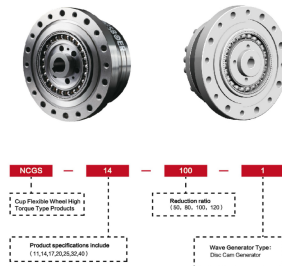
About Desboer

DESBOER (China)—Changzhou Nanpeng Machinery Co., Ltd. was established in 2014 in Jiangsu Province, China. Now the company is mainly engaged in the research, development, production, and sales of DESBOER high-precision planetary gearbox and Strain wave gear to provide the customers with one-stop perfect coordination of product service and experience. DESBOER has always paid great attention to the applicability and reliability of the products and implemented strict quality control.

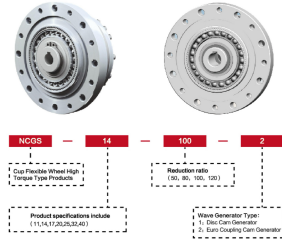
The factory is equipped with top processing equipment from Japan and Germany, complete standard assembly lines and quality guarantee system, together with experienced technicians and workers, to provide the customers with high-quality products and to meet the demand of the market.

Nowadays, the new generation of low backlash planetary gearbox and Strain wave gear developed by DESBOER, which is characterized by high precision, high torsional stiffness, high reliability, low noise, long life and maintenance-free, is widely used in diverse industries such as robot technology, mechanical arm, machine tools, manufacturing systems, food and pack aging equipment, printing machinery and automated production lines.

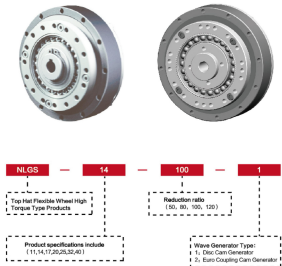
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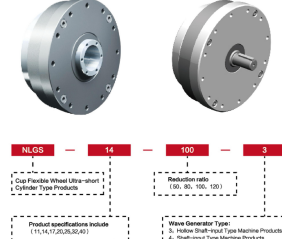
NCGS-2



NLGS-1/2



NLGS-3/4



Strain wave gear

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Composition of strain wave gear

Strain wave gear is composed of three basic parts, namely wave generator, flexible wheel and rigid wheel.

Wave generator: composed of flexible bearing and elliptical cam, wave generator is usually installed in the input end of the reducer, the inner ring of the flexible bearing is fixed on the cam, and the outer ring is elastically deformed into an ellipse through ball bearing.

Flexible wheel: flexible thin-walled elastomer parts with an outer inner ring, usually installed in the output end of the reducer.

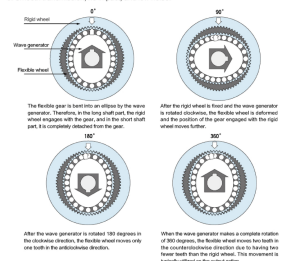
Rigid wheel: rigid circular parts with an inner ring, generally two more teeth than the flexible wheel, usually fixed on the reducer body.

Principle of strain wave gear

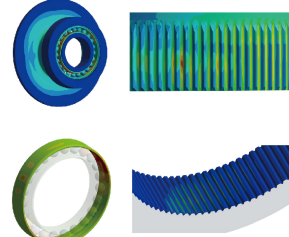
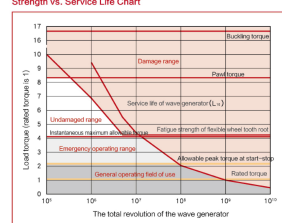
Strain wave gears are used as reducer, usually in the form of active wave generator, rigid wheel and output flexible wheel. When the wave generator is installed in the inner circle of the flexible wheel, the flexible wheel is forced to produce elastic deformation and become elliptical, so that the flexible wheel teeth on the long axis are inserted into the tooth groove of the wheel, becoming fully engaged while the two teeth on the short axis are completely not in contact, in a disengaged state. Between the process of engaging and disengaging, it is in the state of partial contact. When the wave generator rotates continuously, the flexible wheel is forced to constantly produce deformation, and the two wheel teeth constantly change their respective working states during the process of lifting, meshing, disengaging and putting out, resulting in the so-called cross-tooth movement, so as to realize the movement transmission of the active wave generator and the flexible wheel.

Features of strain wave gear

1. High precision: multiple teeth mesh at the same time in two 180 degree symmetrical positions, so the gear pitch error and cumulative pitch error have a relatively average impact on the rotation accuracy, and can obtain very high position accuracy and rotation accuracy.
2. Large transmission ratio: the transmission ratio of single-stage strain wave gear transmission can reach 1:30-500, and the structure is simple. Three basic parts on the same axis can achieve high speed ratio.
3. High bearing capacity: in the fast wave transmission, the meshing of teeth and teeth is surface contact, plus the number of meshing teeth at the same time is relatively large, so the unit area load is small, and the bearing capacity is higher than other transmission forms.
4. Small size and light weight: compared with the ordinary gear type, the volume and weight can be greatly reduced to achieve miniaturization and lightweight.
5. High transmission efficiency and long service life.
6. Smooth transmission, no impact, and low noise.

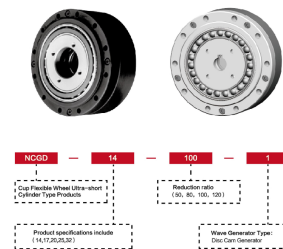


Strength vs. Service Life Chart



Through the establishment of dynamic simulation model, combined with the S-N curve spectrum of flexible gear and flexible bearing materials, the stress distribution state of the parts was optimized, avoiding excessive stress concentration, improving the contact fatigue state of the tooth surface, and improving the service life and stability of the product.

NCGD-1



NLGD-1

