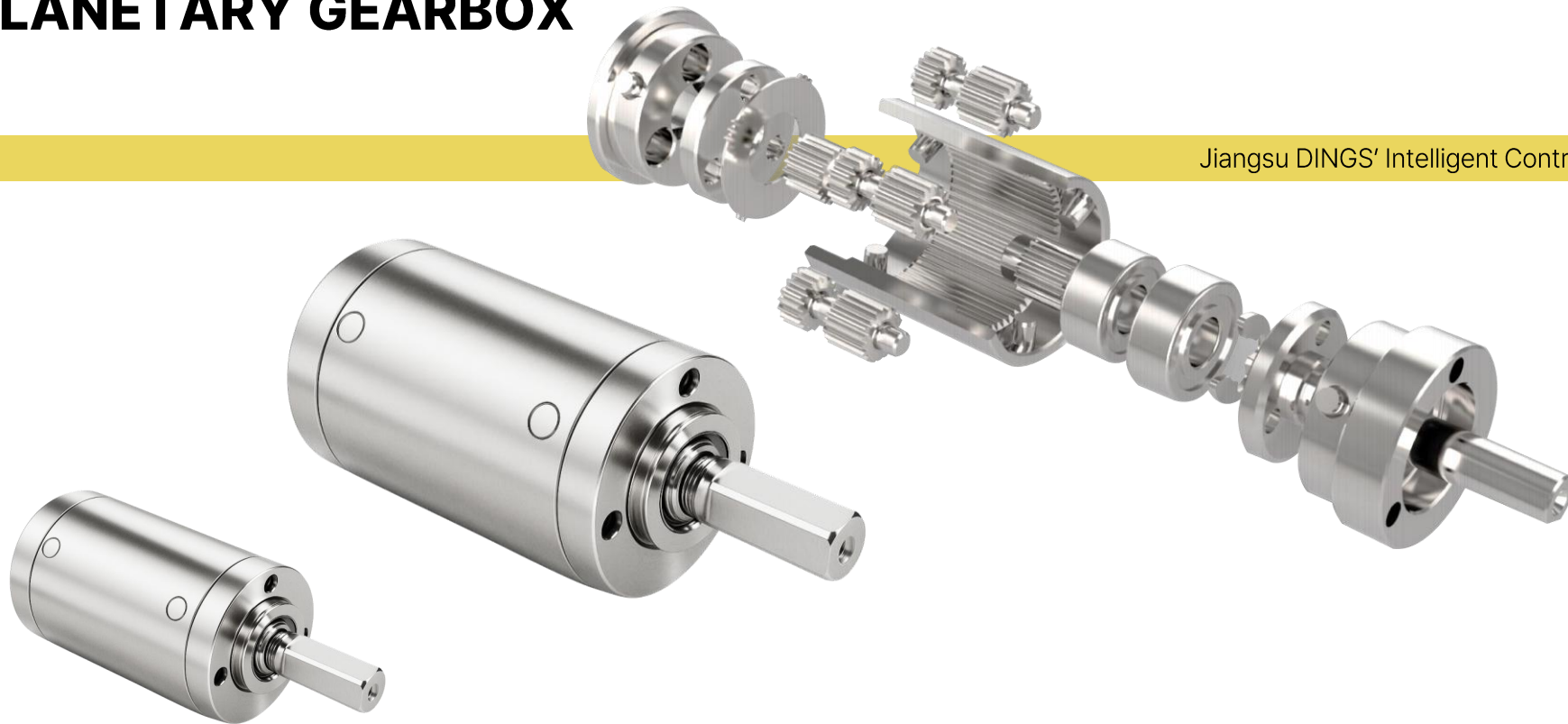


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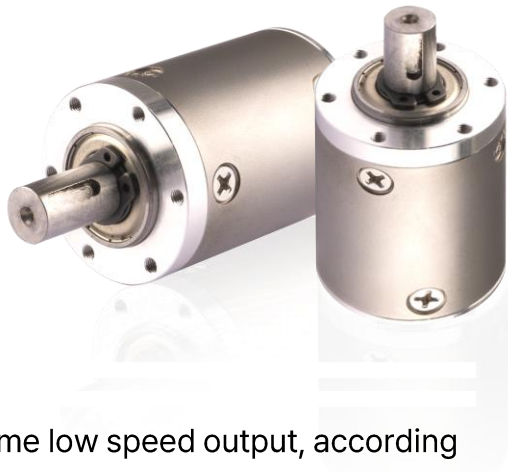
Precision Motion Specialist

## PRECISION PLANETARY GEARBOX



Jiangsu DINGS' Intelligent Control Technology Co., Ltd.

# PRODUCT INTRODUCTION



## Introduction

Product name : Precision planetary gear box  
 Model : 16PGX138-30L-0-0-00MC (Example)

## How to Work

Generally NGW type, fixed by tooth ring, sun wheel high speed input, planetary frame low speed output, according to a certain deceleration ratio, reduce the output speed and improve the output torque.

## Application

Precision planetary gear box has the advantages of small size, high power density, large speed ratio range, coaxial arrangement of input and output, high efficiency, and is widely used in military, medical equipment, auto parts, small household appliances, smart home, solar energy, intelligent robots, precision instruments, automation equipment and other industries

## Part Numbering

00	PG	00	-0L	-0-0-00	XX	
Outer Dia.	Planetary Gear	Ratio	Gearbox length	Serial #	Gear machining method	
					Machining	MC
					Powder Metallurgy	PM
					Injection Mold	PL

# PRODUCT FEATURES



1

## High load carrying capacity

Each stage of transmission can be shared by multiple planetary gears, and compared with ordinary parallel shaft gear transmission, planetary gear boxes have higher load carrying capacity and durability

2

## Compact construction

Input and output coaxial arrangement, small radial size, light weight, can achieve a large deceleration ratio in a limited space.

3

## Smooth operation

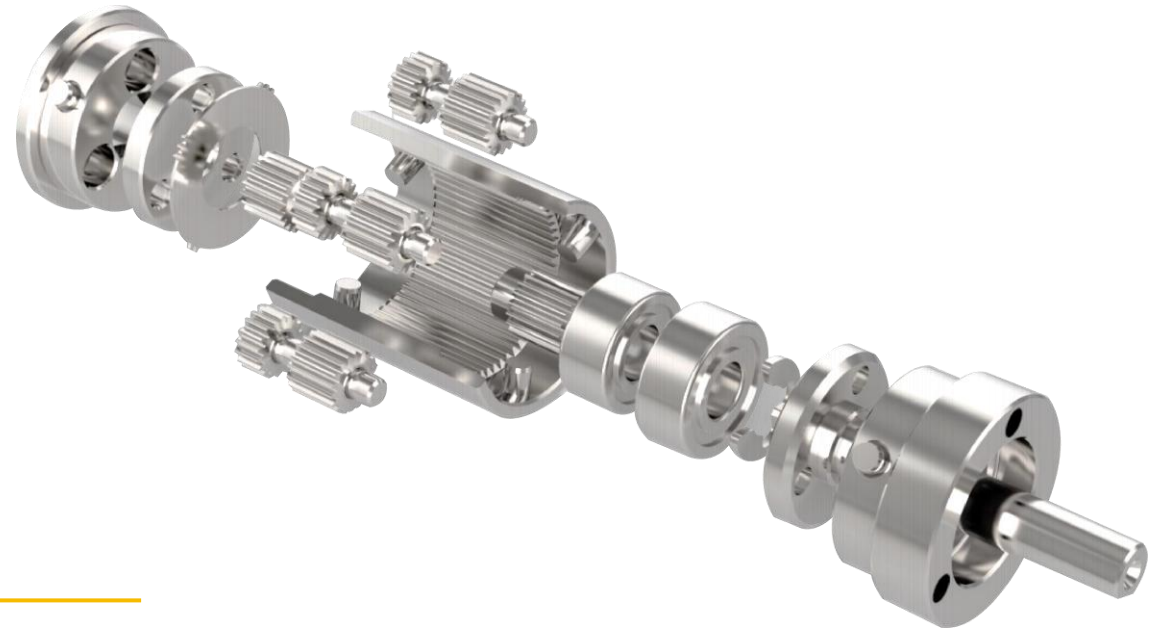
The multi-tooth meshing transmission of the planetary gear is more stable, with less vibration and noise.

4

## High transmission efficiency

Take the 16 series gear box as an example, the primary transmission efficiency can reach 90%, the secondary can reach 80%, and the transmission efficiency is high.

# PRODUCT STRUCTURE



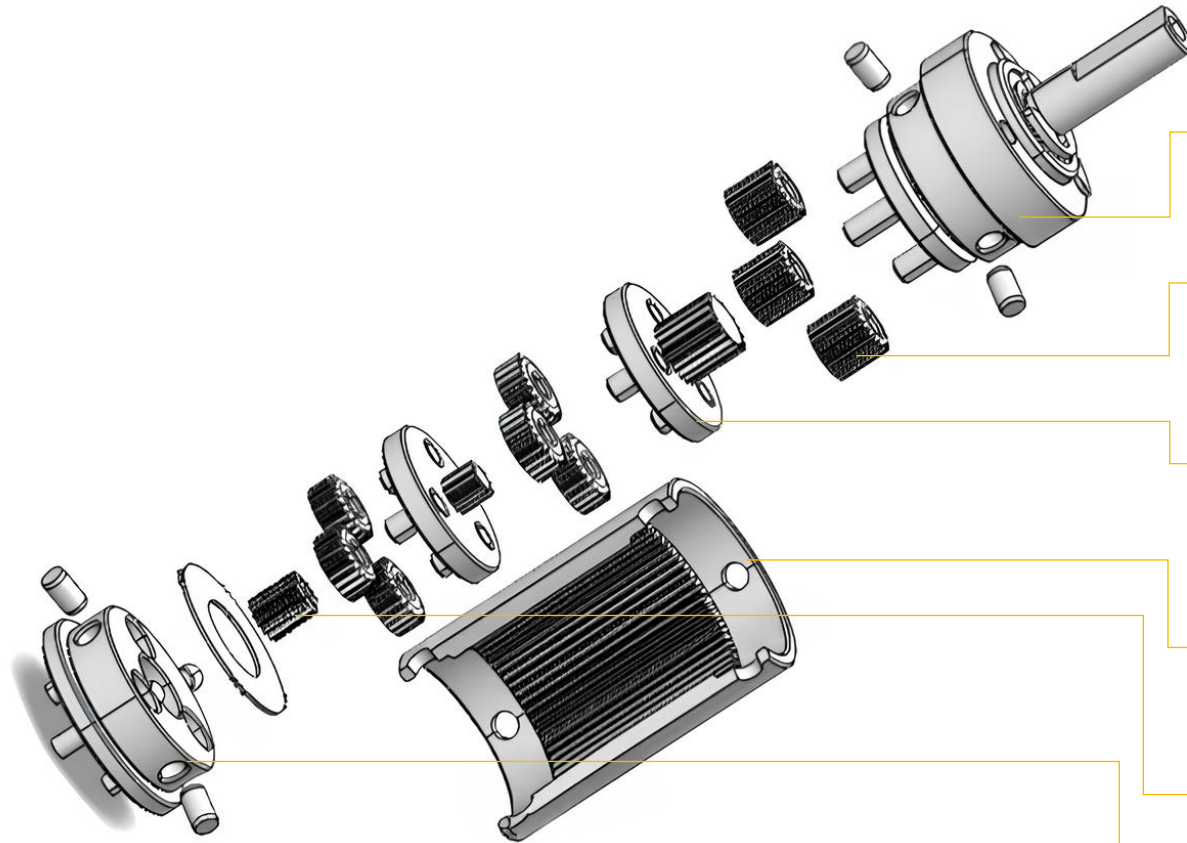
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## Product structure description

The input power is transmitted to the planetary gear through the sun and the planetary gear rotates around the sun gear under the drive of the planetary frame, while engaging with the fixed inner gear ring. Through this series gear meshing and rotating motion, according to a certain reduction ratio to achieve power distribution and deceleration, reduce the output end of the speed and the output end of the torque, and finally output to the output shaft.



# PRODUCT STRUCTURE



## ■ Output shaft assembly

As the power output of the gearbox as a whole , the torque after deceleration is transmitted to the load.

## ■ Planetary gear

Distributed around the sun gear , meshing the sun gear and the inner tooth ring ,supported by the planetary frame.

## ■ Planetary frame

Supports and drives the planetary gear to rotate around the sun gear and acts as a carrier to output power.

## ■ Inner gear ring

Fixed in the housing , meshing the planetary gear.

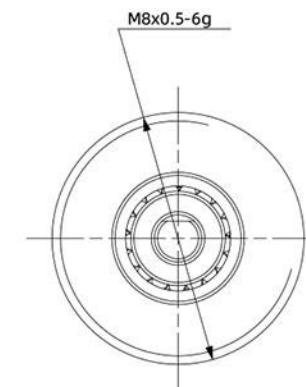
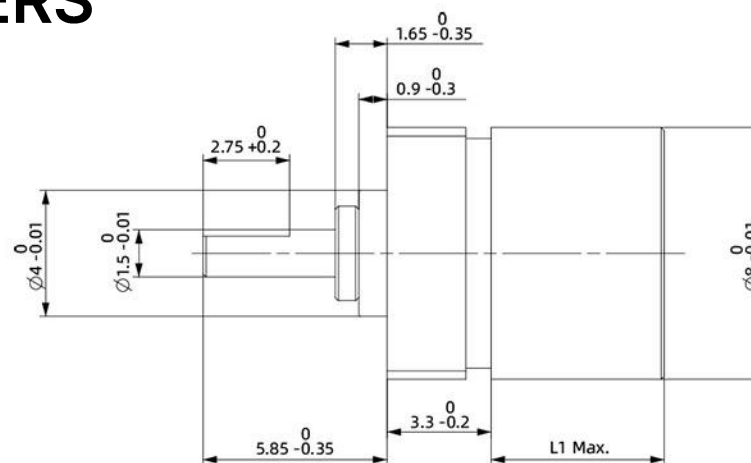
## ■ Sun gear

Located in the center, it is the gear that inputs power.

## ■ Motor joint assembly

Including motor joint, gasket, screw, is the connection between the gear box and the motor.

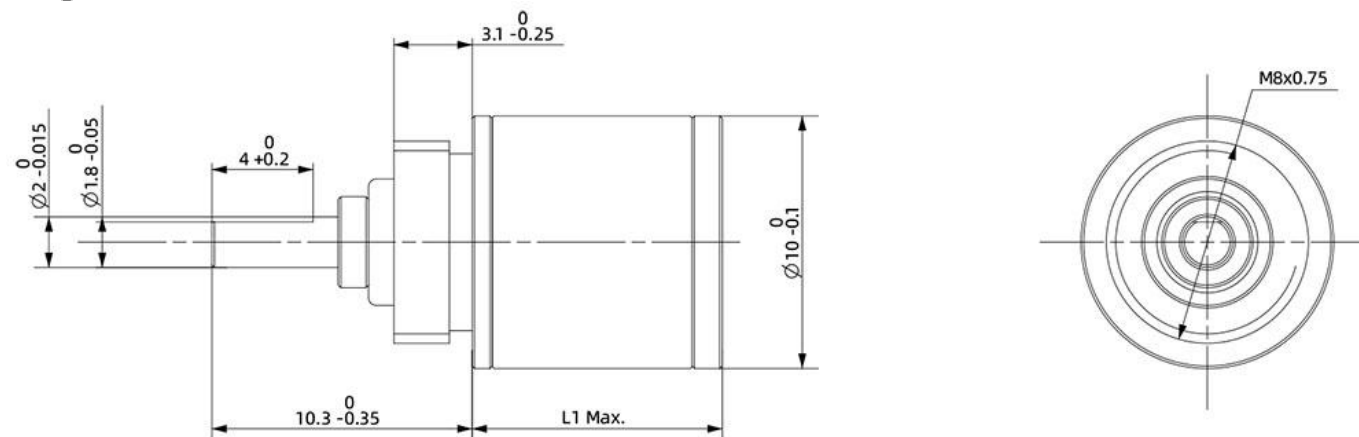
# PRODUCT PARAMETERS



## 8PG Φ8mm Series

Stage		Stage 1	Stage 2	Stage 3
Gear ratio	X : 1	4	16	64
Max. backlash	°	1.8	2.0	2.2
Max. continuous output power	W	0.84	0.52	0.4
Max. peak output power	W	1.05	0.65	0.5
Max. continuous input speed	rpm	14000	14000	14000
Max. peak input speed	rpm	20000	20000	20000
Max. continuous torque	N·m	0.01	0.02	0.06
Max. peak torque	N·m	0.015	0.03	0.09
Max. efficiency	%	90	81	72
Weight	g	2.6	3.2	3.8
Gearbox length L	mm	5.5	8.1	10.7

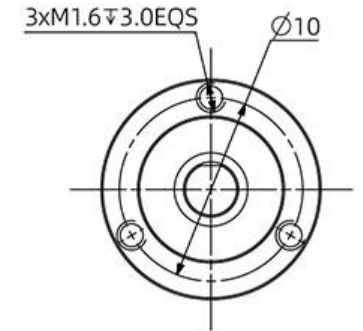
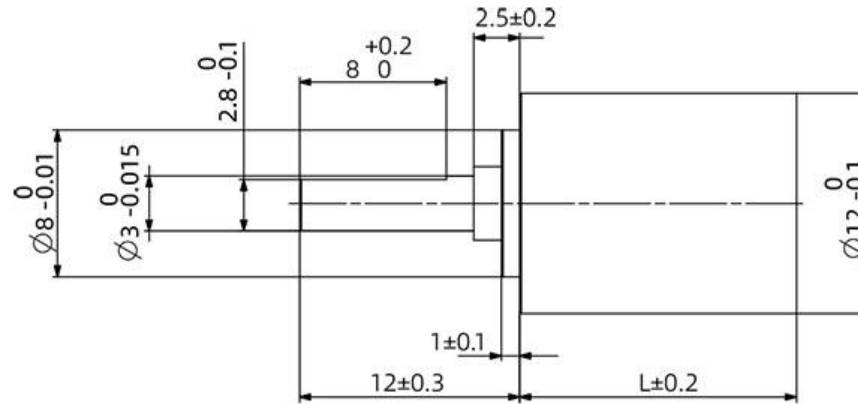
# PRODUCT PARAMETERS



## 10PG Φ10mm Series

Stage		Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	4.25	18	77	326
Max. backlash	°	1.5	1.8	2.0	2.2
Max. continuous output power	W	1.6	1.2	1.0	0.4
Max. peak output power	W	2.0	1.5	1.3	0.5
Max. continuous input speed	rpm	14000	14000	14000	14000
Max. peak input speed	rpm	18000	18000	18000	18000
Max. continuous torque	N·m	0.01	0.03	0.10	0.15
Max. peak torque	N·m	0.02	0.05	0.15	0.2
Max. efficiency	%	90	81	73	65
Weight	g	6.8	7.3	7.8	8.3
Gearbox length L	mm	10.1	13.6	17.1	20.6

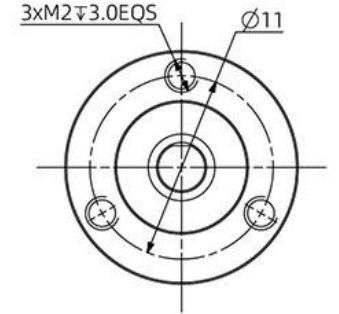
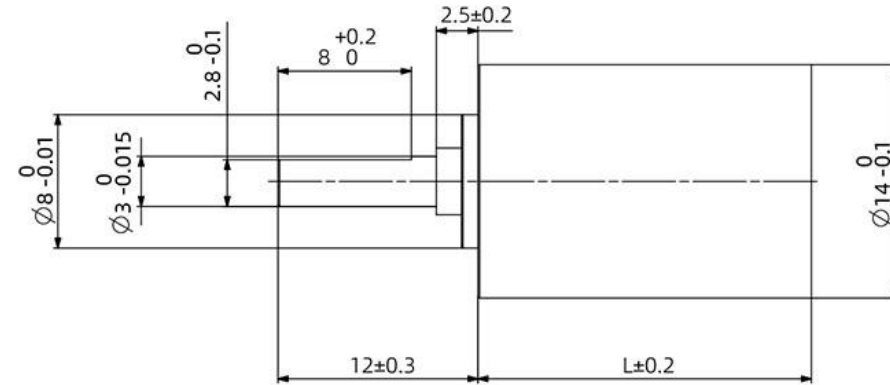
# PRODUCT PARAMETERS



## 12PG Ø12mm Series

Stage		Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	4.3	18.4	79	337
Max. backlash	°	1.2	1.5	1.8	2.1
Max. continuous output power	W	2.0	1.0	0.5	0.25
Max. peak output power	W	2.5	1.25	0.65	0.3
Max. continuous input speed	rpm	16000	16000	16000	16000
Max. peak input speed	rpm	20000	20000	20000	20000
Max. continuous torque	N·m	0.08	0.11	0.14	0.17
Max. peak torque	N·m	0.1	0.14	0.18	0.21
Max. efficiency	%	90	80	75	65
Weight	g	9	12	15	18
Gearbox length L	mm	11.3	15.1	18.9	22.7

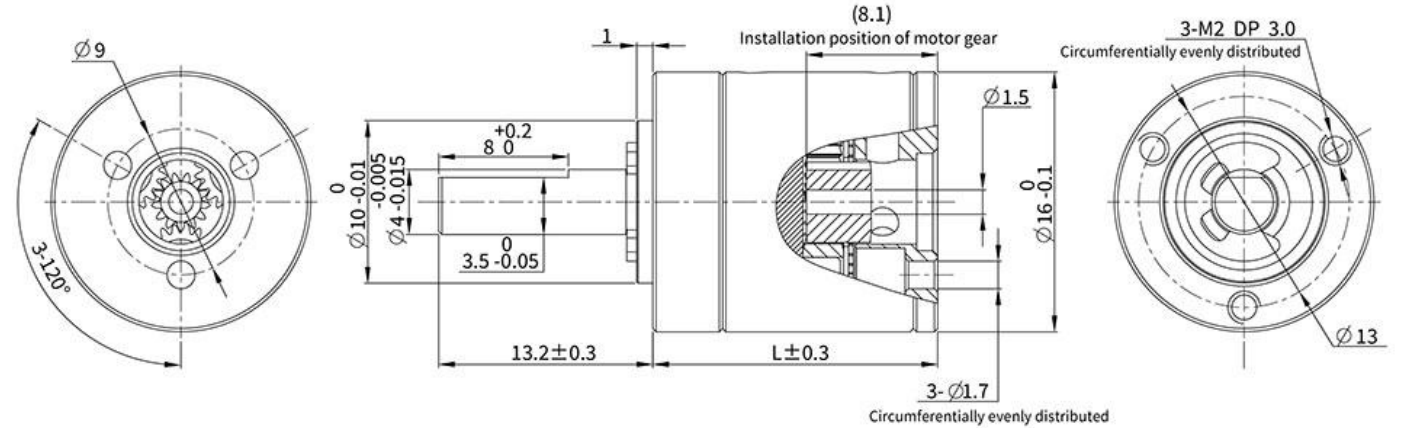
# PRODUCT PARAMETERS



## 14PG Φ14mm Series

Stage		Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	4.3	18.4	79	337
Max. backlash	°	1.1	1.3	1.45	1.7
Max. continuous output power	W	4.0	2.0	1.0	0.4
Max. peak output power	W	5.0	2.5	1.25	0.5
Max. continuous input speed	rpm	14000	16000	16000	16000
Max. peak input speed	rpm	18000	20000	20000	20000
Max. continuous torque	N·m	0.16	0.2	0.25	0.3
Max. peak torque	N·m	0.2	0.25	0.31	0.38
Max. efficiency	%	90	80	75	65
Weight	g	11	15	19	23
Gearbox length L	mm	11.8	16.1	20.4	24.7

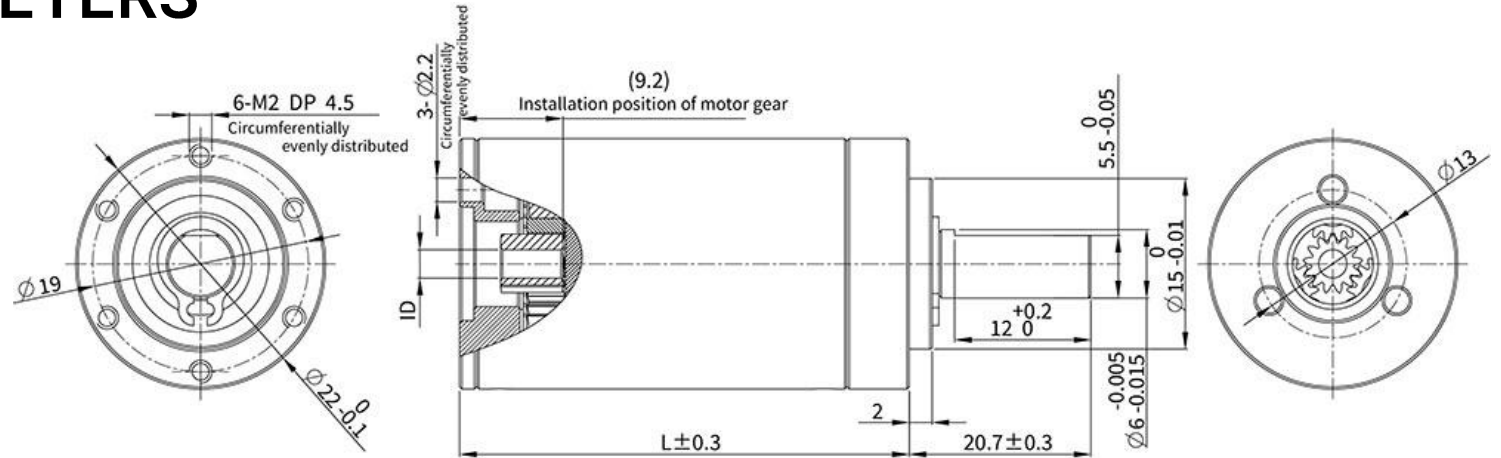
# PRODUCT PARAMETERS



## 16PG Φ16mm Series

Stage		Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	1	1.2	1.3	1.4
Max. continuous output power	W	6.5	3.2	1.6	0.6
Max. peak output power	W	8.0	4.0	2.0	0.75
Max. continuous input speed	rpm	12000	14000	14000	14000
Max. peak input speed	rpm	15000	18000	18000	18000
Max. continuous torque	N·m	0.2	0.25	0.35	0.45
Max. peak torque	N·m	0.25	0.35	0.45	0.55
Max. efficiency	%	90	80	75	65
Weight	g	25	31	37	42
Gearbox length L	mm	18.7	25.5	30.2	42

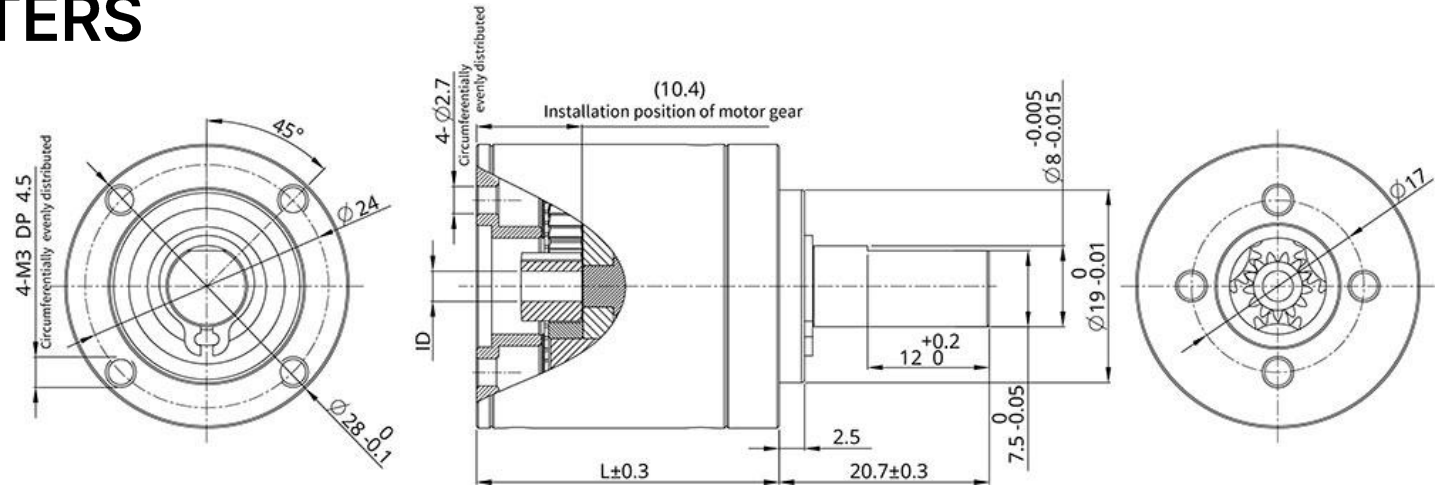
# PRODUCT PARAMETERS



## 22PG Φ22mm Series

Stage		Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	0.85	1.05	1.2	1.35
Max. continuous output power	W	24	12	6.0	1.6
Max. peak output power	W	30	15	7.5	2.0
Max. continuous input speed	rpm	8000	10000	10000	10000
Max. peak input speed	rpm	10000	12500	12500	12500
Max. continuous torque	N·m	0.5	0.7	1.2	1.5
Max. peak torque	N·m	0.6	0.9	1.5	1.9
Max. efficiency	%	90	81	74	66
Weight	g	59	83	97	112
Gearbox length L	mm	22.3	33	39.6	46.3

# PRODUCT PARAMETERS

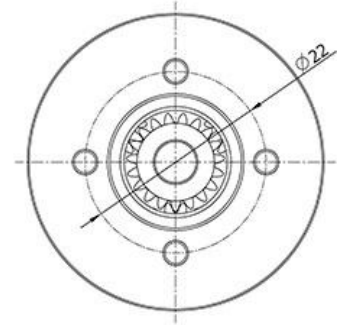
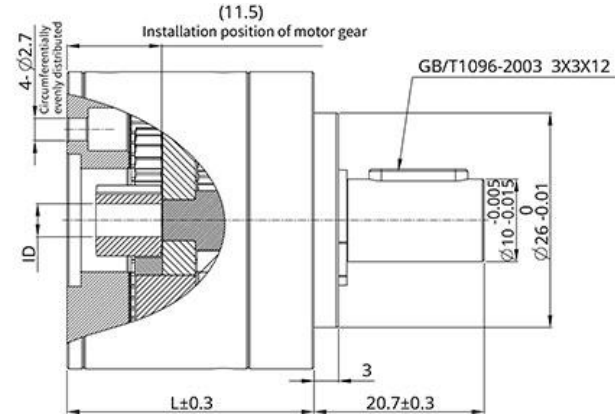
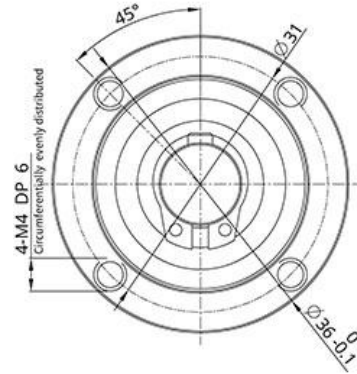


## 28PG Φ28mm Series

Stage		Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	0.5	0.6	0.7	0.75
Max. continuous output power	W	100	50	25	8
Max. peak output power	W	125	62	31	10
Max. continuous input speed	rpm	6000	7000	7000	7000
Max. peak input speed	rpm	7500	8750	8750	8750
Max. continuous torque	N·m	1.25	2.9	5	5
Max. peak torque	N·m	1.6	3.6	6.3	6.3
Max. efficiency	%	90	81	72	65
Weight	g	103	150	174	198
Gearbox length L	mm	24.2	36.9	43.5	50.2



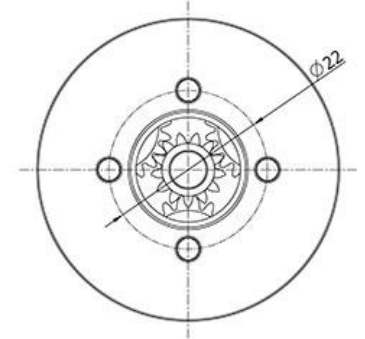
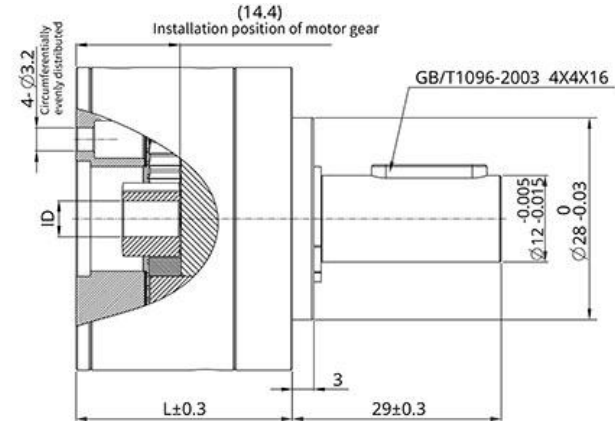
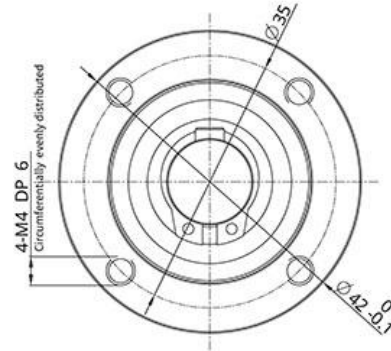
# PRODUCT PARAMETERS



## 36PG Φ36mm Series

Stage		Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	0.5	0.6	0.7	0.8
Max. continuous output power	W	185	90	45	15
Max. peak output power	W	230	115	60	19
Max. continuous input speed	rpm	6000	6000	6000	6000
Max. peak input speed	rpm	7500	7500	7500	7500
Max. continuous torque	N·m	2.3	5.4	9.3	9.3
Max. peak torque	N·m	2.9	6.8	11.6	11.6
Max. efficiency	%	90	80	72	65
Weight	g	156	238	277	315
Gearbox length L	mm	30	44.7	51.3	58

# PRODUCT PARAMETERS



## 42PG Φ42mm Series

Stage		Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	0.3	0.4	0.5	0.6
Max. continuous output power	W	480	200	85	20
Max. peak output power	W	600	250	106	25
Max. continuous input speed	rpm	6000	6000	6000	6000
Max. peak input speed	rpm	7500	7500	7500	7500
Max. continuous torque	N·m	3	7.5	15	15
Max. peak torque	N·m	4.5	11.3	22.5	22.5
Max. efficiency	%	90	81	72	64
Weight	g	252	405	476	544
Gearbox length L	mm	36.1	54.9	63.6	72.4

# PRODUCT MANUFACTURING

Use the gear measuring instrument of the same specification of the National Testing Center

Key parts are produced independently with imported equipment, with equipment investment of more than U\$4.3Mil



# GEAR PROCESSING & TESTING EQUIPMENT

## GF Machining Center

A machining center is an efficient and precise CNC machine tool that can process complex surfaces and precision parts.

It has advantages such as high precision, high speed, high flexibility and advanced automation.

GF adopts efficient vertical machining centers for large-sized cast iron structural components which can ensure good vibration absorption, high stability and high rigidity during continuous machining under large load-bearing conditions.

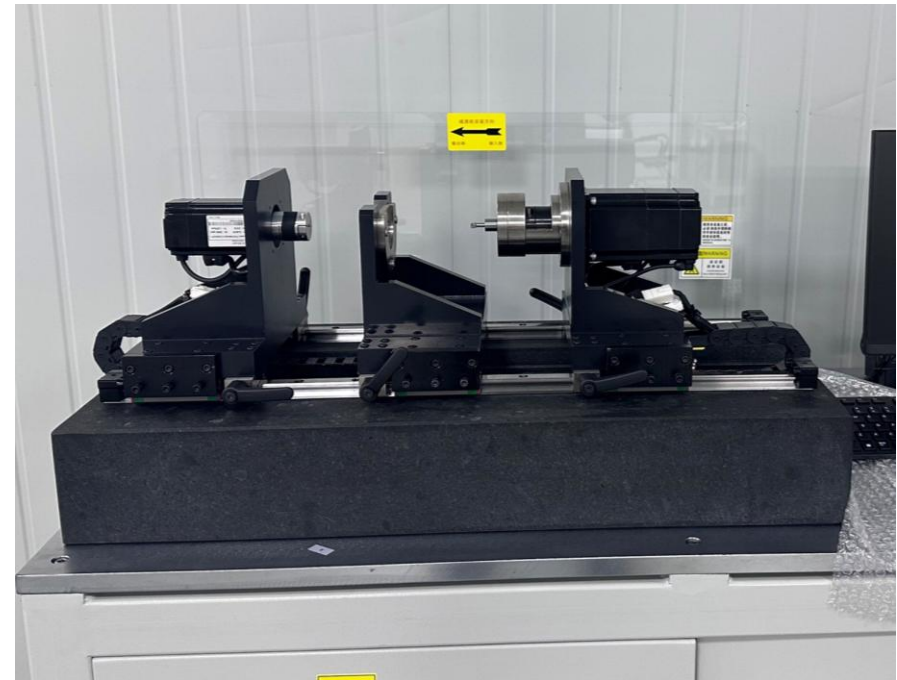


# GEAR PROCESSING & TESTING EQUIPMENT

## Backlash Detector

The computer-controlled gearbox backlash arc minute measuring bench is composed of a loading system, rotation system, spatial adjustment mechanism, FTS (Fault tolerance system) precision testing system, computer control display system, and clamping mechanism.

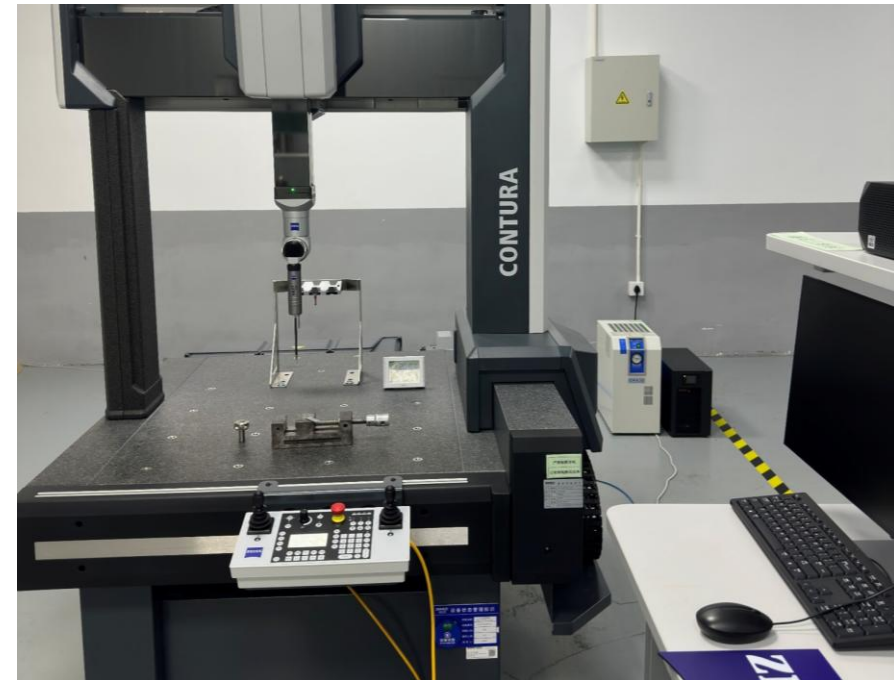
It is suitable for performance testing of planetary gearbox backlash includes forward and backward no-load repeated positioning detection, return clearance, backlash testing, backlash arc minute measuring and minimum starting torque detection.



# GEAR PROCESSING & TESTING EQUIPMENT

## Zeiss Coordinate Measuring Machine

It is a measuring instrument used in the fundamental disciplines of engineering and technical science as well as the field of mechanical engineering in order to measure the geometric dimensions of products includes diameter, distance, angle, shape, position dimensions and output coordinate values of measurement elements.





# GEAR PROCESSING & TESTING EQUIPMENT

## Gear Hobbing Machine

Capable of cutting straight and helical cylindrical gears as well as machining worm gears, sprockets etc.

A gear processing machine tool for machining spur, helical, herringbone cylindrical gears, and worm gears using a hob according to the generation method.



# GEAR PROCESSING & TESTING EQUIPMENT

## Klinberg Gear Measurement Center

It is an analytical instrument used in the fields of physics, engineering, technical science and mechanical engineering.

The measurement center can detect cylindrical gears, bevel gears, gear shapers and shavers, worm gears, rotors, hobs, broaches, rotational symmetric workpieces etc.

It can also be used for Fourier detection of new energy gears.



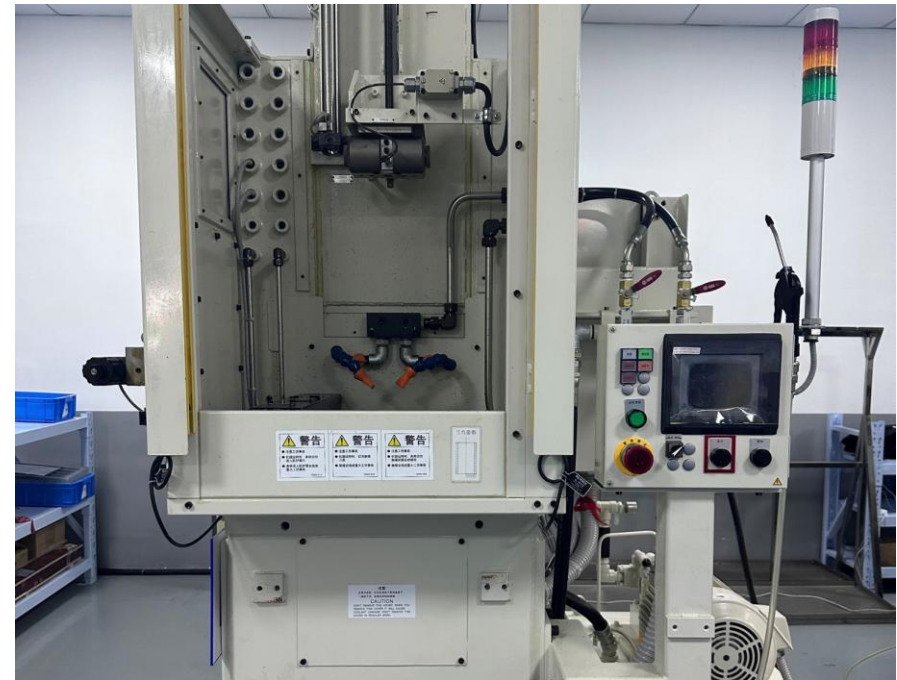


# GEAR PROCESSING & TESTING EQUIPMENT

## Broacher

A machine tool that uses a broach as a tool to process through holes, flat surfaces and formed surfaces of workpieces.

Broaching can achieve high dimensional accuracy and small surface roughness, high productivity and is suitable for mass production in batches.

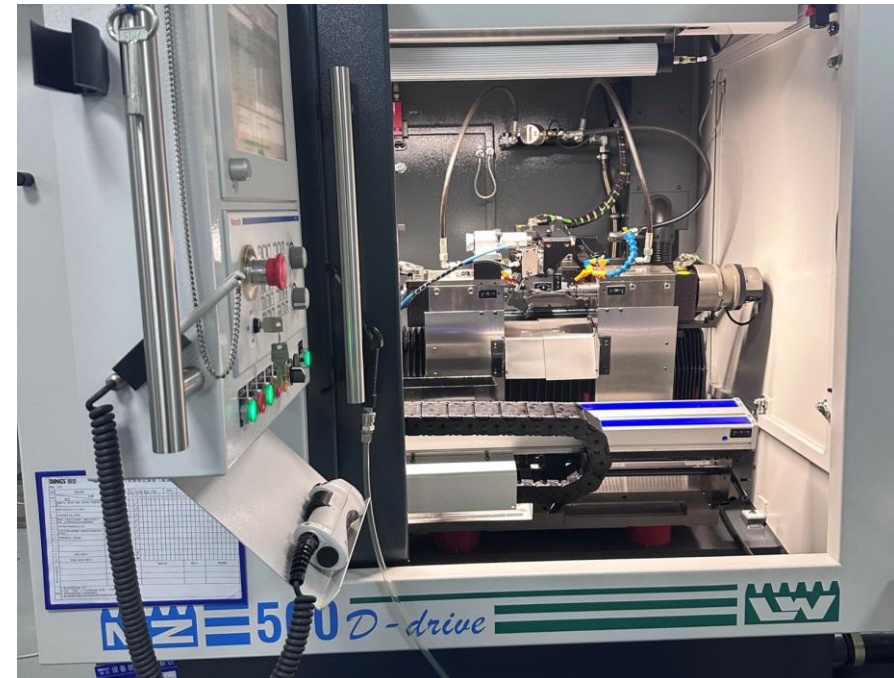


# GEAR PROCESSING & TESTING EQUIPMENT

## Small Module Gear Hobbing Machine

The Swiss Lambert Wahli small module gear hobbing machine 500D is a representative product of its company with excellent performance.

It is used for high-performance and high-precision small module gear machining, eight axis CNC and is used in the clock, instrument and micro machinery industries.



# THANK YOU



[www.dingsmotion.com](http://www.dingsmotion.com)

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