RV Reducer Catalog

— WANSHSIN —

WANSHSIN SEIKOU (HUNAN) CO., LTD

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WANSHSIN® Committed To Building a World-class Intelligent Electromechanical Brand

Committed to building
a world-class intelligent electromechanical brand

Contents

WANSHSIN SEIKOU (HUNAN) CO., LTD
Committed To Building a World-class Intelligent Electromechanical Brand

WANSHSIN was founded in 2009 in Dongguan city, Guangdong province, moved its headquarter to Changsha city, Huanan province in 2014.

Now we have three production bases in Changsha , Dongguan and Zhuzhou, and R&D offices in Hunan, Shenzhen and Japan.

WANSHSIN is a professional gearbox, gear motor and inverter manufacturer and intelligent auto-mation complete solution provider, integrating R&D, production, sales and service. The products cover the light and heavy industry, are widely used in new energy, robots, automobile manu-facturing, warehousing, logistics, food industry and other industries.

RV REDUCER

The RV reducer boasts numerous advantages, including compact size, strong shock resistance, high torque, excellent positioning accuracy, low vibration, and a large reduction ratio. It overcomes the shortcomings of general cycloidal pinwheel transmission and addresses the issue of significant precision loss in harmonic drives during prolonged operation. The RV reducer offers higher fatigue strength, rigidity, longer service life, and stable backlash accuracy. As a result, it is gradually being increasingly applied in industrial robots, CNC machines, medical diagnostic equipment, robotic arms, and positioning satellite reception systems, among other fields.

ADVANTAGES

High Structural Rigidity

Hardened gear surface structure; professional gear profile modification strengthened load-bearing components, resulting in a 15% increase in overall product rigidity

High Precision

Backlash ≤ 1 arcmin, can be controlled within 30 arcsec for customization

High Efficiency

Efficiency is increased by 5% compared with others

Compact Structure

Single-stage transmission replaces multi-stage transmission, resulting in a more compact design and higher space utilization
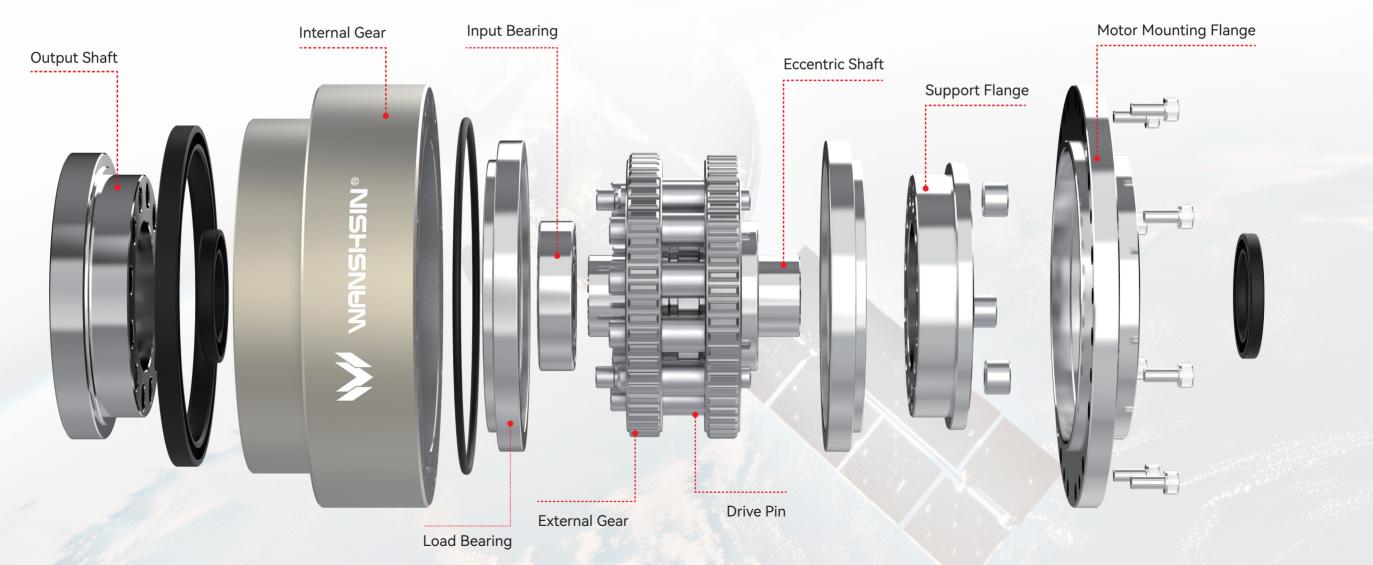
Higher Durability

Systematic design of key parameters ensures a longer service life; high hardness gear surface treatment provides enhanced wear resistance

Complete Range of Products

Interface dimensions cover mainstream international well-known brands in the market and accept specialized customization

Output Shaft

Internal Gear

Input Bearing

Eccentric Shaft

Motor Mounting Flange

Support Flange

WANSHSIN

Load Bearing

External Gear

Drive Pin

TRANSMISSION PRINCIPLE

In the gear transmission of the reducer, the eccentric portion of the input shaft rotates, driving the external gear to perform an eccentric motion. During this movement, the eccentric shaft engages the external gear with the internal gear. Due to the difference in the number of teeth (n) between the internal and external gears, when the eccentric shaft completes one rotation, the external gear lags behind the internal gear by n teeth, resulting in a differential gear ratio
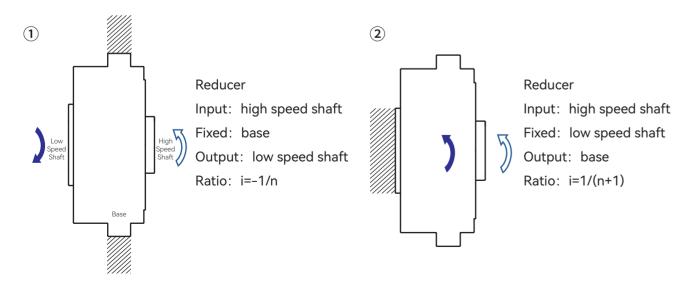
z_w —— Teeth Number Of External Gear
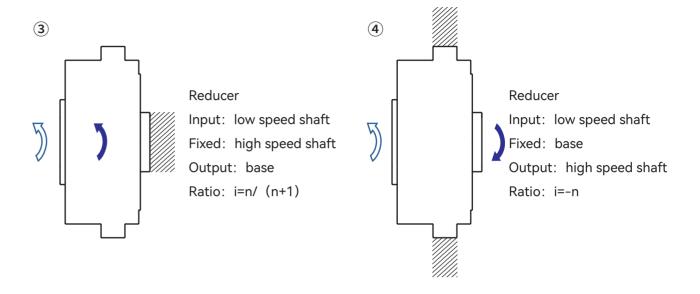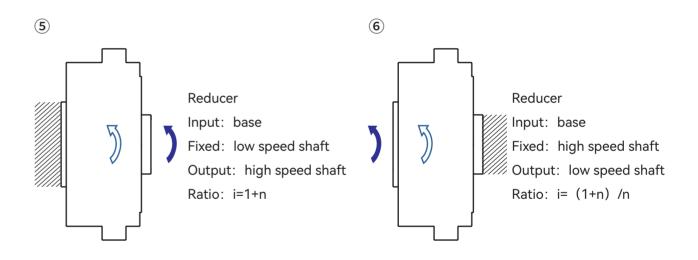
z_n —— Teeth Number Of Internal Gear

$$i = \frac{z_w}{z_n - z_w}$$

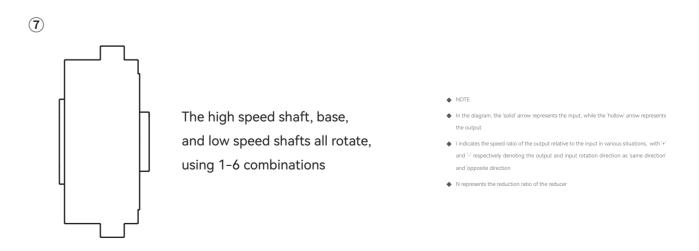| Zero Turns Of The Eccentric Shaft	Half A Turn Of The Eccentric Shaft	One Full Turn Of The Eccentric Shaft

Structural Introduction

Depending on the different positions of the fixed point, input, and output.

the rotation direction and speed ratio vary as shown in the diagram

①

Low Speed Shaft   High Speed Shaft   Base

Reducer
Input: high speed shaft
Fixed: base
Output: low speed shaft
Ratio: i=-1/n

②

Reducer
Input: high speed shaft
Fixed: low speed shaft
Output: base
Ratio: i=1/(n+1)

③

Reducer
Input: low speed shaft
Fixed: high speed shaft
Output: base
Ratio: i=n/ (n+1)

④

Reducer
Input: low speed shaft
Fixed: base
Output: high speed shaft
Ratio: i=-n

⑤

Reducer
Input: base
Fixed: low speed shaft
Output: high speed shaft
Ratio: i=1+n

⑥

Reducer
Input: base
Fixed: high speed shaft
Output: low speed shaft
Ratio: i= (1+n) /n

⑦

The high speed shaft, base, and low speed shafts all rotate, using 1-6 combinations

◆ NOTE:

◆ In the diagram, the 'solid' arrow represents the input, while the 'hollow' arrow represents the output

◆ I indicates the speed ratio of the output relative to the input in various situations, with '+' and '-' respectively denoting the output and input rotation direction as 'same direction' and 'opposite direction'

◆ N represents the reduction ratio of the reducer

RV Reducer

Product Features

WRA

WF4CF-C

WF4CF-DA

WCF

SERIES	WRA	WF4CF-C	WF4CF-DA	WCF
Rated Torque/N.m	50-7500	207-3713	245-1615	6-300
Ratio	31-203	59-119	29-119	31-161
Direct Input Type	◎	—	—	◎
Hollow Type	—	◎	—	—
Compact Structure	◎	◎	◎	○
Rotational Accuracy	◎	◎	◎	○
Operational Smoothness	◎	◎	◎	◎
High Rigidity	◎	◎	◎	◎
Self-Sealing	◎	○	○	○
Switchable Output Method	○	○	○	○
Customization	◎	◎	◎	◎

Applications

RV REDUCERS are primarily used in applications
that require high transmission accuracy, high gear ratios, and optimal space utilization
INCLUDING:
Machine tools and manufacturing systems;
wood processing machinery; printing and paper machines;
food and packaging machinery; robotics, automation technology and more

Robotics

Machine Tools And Manufacturing Systems

Printing And Paper Machines

Wood Processing Machinery

Torsional Rigidity

The ability of a component to resist torsional deformation under applied torque, or the ratio of rated load torque to the tangential elastic deformation angle

Hysteresis Curve

It is obtained by gradually loading the output end to the rated torque with the input end fixed, unloading it afterward, and recording the corresponding torque and angle values of the output end. The completed torque-angle curve is then plotted

Hysteresis

It is the absolute value of the difference in angle between the midpoints of two sets of intersections at ±3% of the rated torque on the hysteresis curve

Bending Rigidity

The ratio of the bending moment on the output end to the elastic deflection angle of the output end axis

No-load Torque

With no load on the output end, it is the input torque required to drive the input end at various steady speeds. (The no-load friction torque can also be represented using a speed-torque curve)

Starting Torque

With no load on the output end, it is the torque required to slowly twist the input end until the output end begins to move

Reverse Starting Torque

With no load on the input end, it is the torque required to slowly twist the output end to initiate movement at the input end

Transmission Accuracy

In a working state, when the input shaft rotates in one direction, it refers to the degree to which the actual rotational angle of the output shaft approximates the theoretical rotational angle. (The level of transmission accuracy is measured by the magnitude of the transmission error; smaller transmission errors indicate higher accuracy, while larger errors indicate lower accuracy). Transmission error: In a working state, when the input shaft rotates in one direction, it is the difference between the actual rotational angle of the output shaft and the theoretical rotational angle

Idle Running

In a working state, when the input shaft changes from forward to reverse rotation, it refers to the lag in the rotational angle of the output shaft

Backlash

With both the output end and the gearbox casing are fixed, a small angular displacement at the input end of the gearbox occurs when rotating clockwise and counterclockwise with a ±2% rated torque applied

Rated Torque

It is the continuous load torque allowed at the output end when the input speed is 1750 revolutions per minute (the rated speed of the RV gearbox)
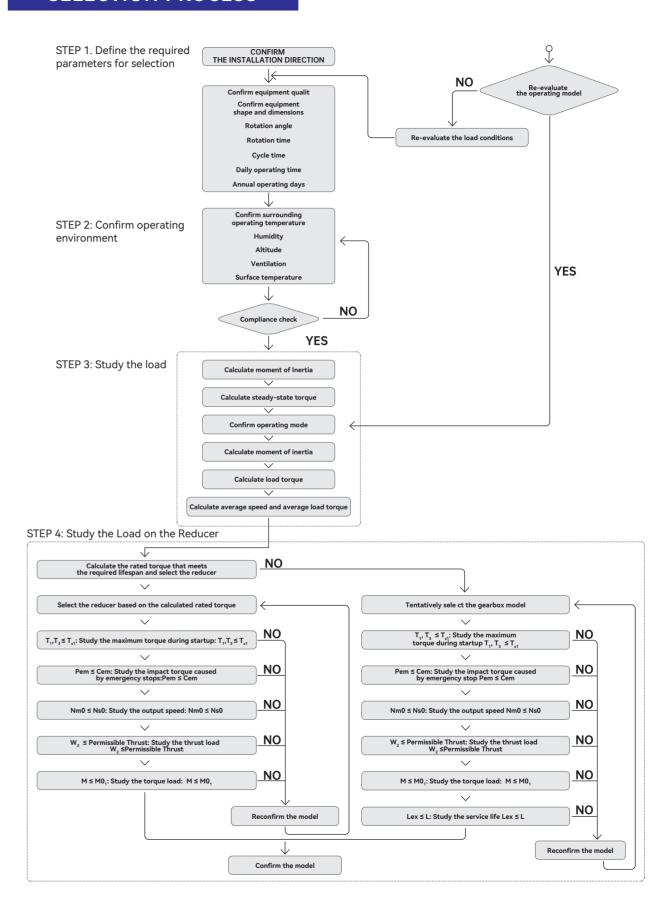
Lifespan

It refers to the duration the reducer can operate reliably under specific conditions, typically defined as when the input speed is 1750 revolutions per minute (the rated speed of the gearbox) and the output torque is at the rated torque level

Efficiency

It is calculated in real-time by collecting input and output torques at different speeds and torque levels. The mechanical efficiency can be represented as speed-efficiency curve, load-efficiency curve, temperature-efficiency curve, and efficiency value under specified conditions. During testing, both speeds and torques can be adjusted. For RV reducers, the efficiency should not be less than 80%

STEP 1. Define the required parameters for selection

STEP 2: Confirm operating environment

STEP 3: Study the load

STEP 4: Study the Load on the Reducer
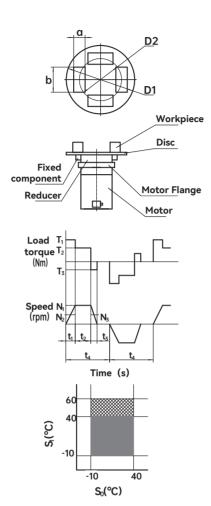
Product Selection Example

STEP 1. Define the required parameters for selection

Project Settings	Set Values
Reducer installation orientation	Vertical installation
Study the weight of the equipment	
W_A——Plate weight（kg）	180
W_B——Plate weight（kg）	20×4PCs
The shape of the equipment	
D_1——Plate（mm）	1200
a——Workpiece（mm）	100
b——Workpiece（mm）	300
D_2——Plate（mm）	1000
Operating conditions	
θ——Rotation angle（°）	180
【t_1+t_2+t_3】——Rotation time（s）	2.5
【t_c】—— Cycle time（s）	20
Q_1——Daily Operating Time（H/Day）	12
Q_2——Annual Operating Days（Days/Year）	365

When operating at small angles of rotation (less than 10 °), inadequate lubrication and concentrated internal component loading may potentially shorten the rated lifespan of the reducer

STEP 2: Confirm Operating Environment

Project Settings	Standard Values
S_0——Ambient temperature（℃）	–10~40
S_1——Gearbox surface temperature（℃）	Below 60

STEP 3: Study the Load on the Reducer

| Project Settings	Calculation Formula	Example
Calculate inertial torque		
I_R — Load inertia torque (kgm²)	$I_{R1} = \dfrac{W_a \times \left(\frac{D_1}{2 \times 1000}\right)^2}{2}$ $I_{R2} = \left[\dfrac{W_B}{12}\left\{\left(\dfrac{a}{1000}\right)^2 + \left(\dfrac{b}{1000}\right)^2\right\} + W_B \times \left(\dfrac{D_2}{2 \times 1000}\right)^2\right] \times n$ I_{R1}=Plate inertia I_{R2}=Operational inertia I_R=I_{R1}+I_{R2} n=Quantity of workpieces	$I_{R1} = \dfrac{180 \times \left(\frac{1200}{2 \times 1000}\right)^2}{2} = 32.4(kgm^2)$ $I_{R2} = \left[\dfrac{20}{12}\left\{\left(\dfrac{100}{1000}\right)^2 + \left(\dfrac{300}{1000}\right)^2\right\} + 20 \times \left(\dfrac{1000}{2 \times 1000}\right)^2\right] \times 4$ $= 20.7(kgm^2)$ $I_R = 32.4 + 20.7 = 53.1(kgm^2)$
Study of torque during stability		
T_R — Torque at steady state (Nm)	$T_R = (W_A + W_B) \times 9.8 \times \dfrac{D_{in}}{2 \times 1000} \times \mu$ μ =Coefficient of friction Note: The bearing of the precision gearbox CT–CRV is loaded, hence a coefficient of friction of 0.015 applies Din = Rotational diameter: In this selected calculation, the positioning circle diameter used is nearly identical to the rotational diameter	$T_R = (180 + 20 \times 4) \times 9.8 \times \dfrac{328}{2 \times 1000} \times 0.015$ $= 6.3(Nm)$
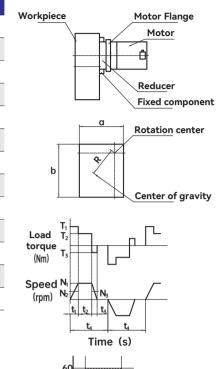
STEP 1. Define the required parameters for selection

Project Settings	Set Values
Reducer installation orientation	Vertical installation
Study the weight of the equipment	
W_c——Weight of the Loaded Workpiece（kg）	490
The shape of the equipment	
a——a Length（mm）	500
b——b Length（mm）	500
R——R Length（mm）	320
Operating conditions	
θ——Rotation angle（°）	90
【t_1+t_2+t_3】——Rotation time（s）	1.5
【t_c】—— Cycle time（s）	20
Q_1——Daily Operating Time（H/Day）	24
Q_2——Annual Operating Days（Days/Year）	365

When operating at small angles of rotation (less than 10°), inadequate lubrication and concentrated internal component loading may potentially shorten the rated lifespan of the reducer

STEP 2: Confirm Operating Environment

Project Settings	Standard Values
S_0——Ambient temperature（℃）	–10~40
S_1——Gearbox surface temperature（℃）	Below 60

STEP 3.1: Study the Load on the Reducer

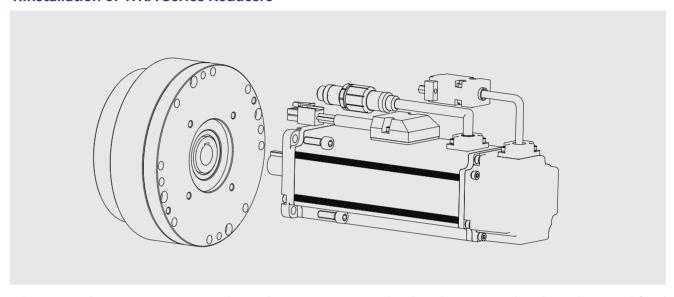| Project Settings	Calculation Formula	Example
Calculate inertial torque		
I_R — Load inertia torque (kgm²)	$I_R = \dfrac{W_C}{12}\left\{\left(\dfrac{a}{1000}\right)^2 + \left(\dfrac{b}{1000}\right)^2\right\} + W_C \times \left(\dfrac{R}{2 \times 1000}\right)^2$	$I_R = \dfrac{490}{12} \times \left\{\left(\dfrac{500}{1000}\right)^2 + \left(\dfrac{500}{1000}\right)^2\right\} + 490 \times \left(\dfrac{320}{1000}\right)^2$ $= 70.6(kgm^2)$
Study of torque during stability		
T_R — Torque at steady state (Nm)	$T_R = W_C \times 9.8 \times \dfrac{R}{1000}$	$T_R = 490 \times 9.8 \times \dfrac{320}{1000} = 1537(Nm)$

STEP 3.2 Setting the required items for selection

Project Settings	Calculation Formulas	Selected Example(horizontal rotation movement)
Set the acceleration/deceleration time, constant speed time, and each output speed		
t_1 ——Acceleration time t_2 ——Stable operation time t_3 ——Deceleration time N_2 ——Constant speed	After determining the operating mode, further research is not necessary. If the operating mode is not determined, the following formulas can be used to study the reference operating mode parameters 1.Calculate t_1 and t_3 as the same time 2.When the reducer output speed (N_2) is unclear, select N_2 = 15rpm 3.If t_1 and t_3 are below 0, increase the output speed or extend the rotation time $t_2 = $ Rotation time $[t_1+t_2+t_3]-(t_1+t_3)$ $t_1 = t_3 = $ Rotation time $[t_1+t_2+t_3]-\dfrac{\theta}{\left(\dfrac{N_2}{60}\times 360\right)}$	In this equipment study, since the reducer output speed N_2 is unclear, the study is conducted with N_2 = 15rpm $t_1 = t_3 = 2.5 - \dfrac{180}{\left(\dfrac{15}{60}\times 360\right)} = 0.5(s)$ $t_2 = 2.5 - (0.5+0.5) = 1.5(s)$ $t_1 = t_3 = 0.5(s)$ $t_2 = 1.5(s)$ $N_2 = 15(rpm)$
N_1 ——Average speed at start	$N_1 = \dfrac{N_2}{2}$	$N_1 = \dfrac{15}{2} = 7.5(rpm)$
N_3 ——Average speed at stop	$N_3 = \dfrac{N_2}{2}$	$N_3 = \dfrac{15}{2} = 7.5(rpm)$
Calculation of inertial torque during acceleration and deceleration		
T_A——Inertial torque during acceleration (Nm)	$T_A = \left\{\dfrac{I_R \times (N_2 - 0)}{t_1}\right\}\times\dfrac{2\pi}{60}$	$T_A = \left\{\dfrac{53.1\times(15-0)}{0.5}\right\}\times\dfrac{2\pi}{60} = 166.8(Nm)$
T_D——Inertial torque during deceleration (Nm)	$T_D = \left\{\dfrac{I_R \times (0 - N_2)}{t_3}\right\}\times\dfrac{2\pi}{60}$	$T_D = \left\{\dfrac{53.1\times(0-15)}{0.5}\right\}\times\dfrac{2\pi}{60} = -166.8(Nm)$
Calculation of load torque during acceleration and deceleration		
T_1——Maximum torque at start (Nm)	$T_1 = \|T_A + T_R\|$ T_R : Torque during stable operation Steps for horizontal rotation and movement: Refer to the steps for using the device in the horizontal rotation and movement mode Steps for vertical rotation and movement: Refer to the steps for using the device in the vertical rotation and movement mode	$T_1 = \|166.8 + 6.3\| = 173.1(Nm)$
T_2——Maximum torque during stable operation (Nm)	$T_2 = \|T_R\|$	$T_2 = 6.3(Nm)$
T_3——Maximum torque at stop (Nm)	$T_3 = \|T_D + T_R\|$ T_R : Torque during stable operation Steps for horizontal rotation and movement: Refer to the steps for using the device in the horizontal rotation and movement mode Steps for vertical rotation and movement: Refer to the steps for using the device in the vertical rotation and movement mode	$T_3 = \|-166.8 + 6.3\| = 160.5(Nm)$
Calculation of average speed		
N_m ——Average speed (rpm)	$N_m = \dfrac{t_1 \times N_1 + t_2 \times N_2 + t_3 \times N_3}{t_1 + t_2 + t_3}$	$N_m = \dfrac{0.5\times7.5 + 1.5\times15 + 0.5\times7.5}{0.5+1.5+0.5}$ $= 12(rpm)$
Calculation of average load torque		
T_m ——Average load torque (Nm)	$T_m = \sqrt[\frac{10}{3}]{\dfrac{t_1\times N_1\times T_1^{\frac{10}{3}} + t_2\times N_2\times T_2^{\frac{10}{3}} + t_3\times N_3\times T_3^{\frac{10}{3}}}{t_1\times N_1 + t_2\times N_2 + t_3\times N_3}}$	$T_m = \sqrt[\frac{10}{3}]{\dfrac{0.5\times7.5\times173^{\frac{10}{3}} + 1.5\times15\times6.7^{\frac{10}{3}} + 1.5\times7.5\times159.5^{\frac{10}{3}}}{0.5\times7.5 + 1.5\times15 + 0.5\times7.5}}$ $= 110.0(Nm)$

INSTALLATION AND USE OF RV REDUCER

The dimensions of the motor mounting flange of the RV reducer vary depending on the servo motor, which may cause differences in installation dimensions. Therefore, it is essential to install the servo motor specified at the time of order
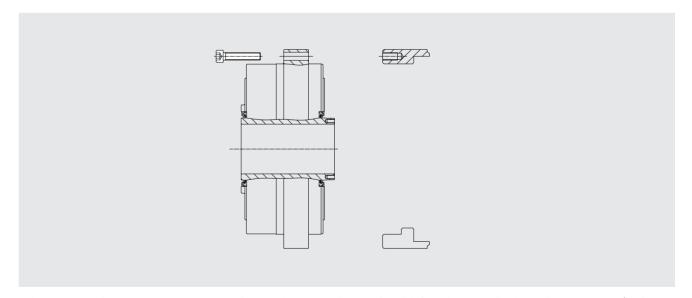
1.Installation of WRA Series Reducers

When using the WRA series gear reducer, the servo motor can be directly connected to the reducer and fixed with bolts (it is recommended to use grade 12.9) to ensure a secure torque connection
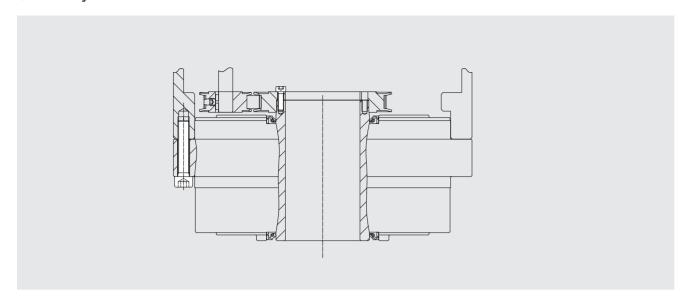
2.Installation of WF4CF-C Series Reducers
① Assembly of RV Reducer with Device Housing

When using the WF4CF-C series reducer, the RV reducer should first be installed on the customer's device housing and secured with bolts (recommended grade 12.9) to ensure proper torque fixation
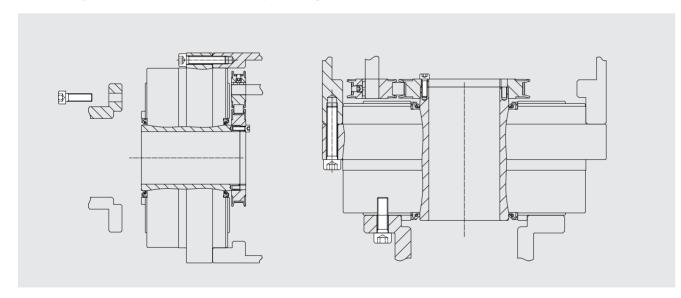
②Assembly of RV Reducer with the Motor

Assemble the pulley and other input components onto the high-speed shaft end of the RV reducer using bolts.

Ensure that the installation is stable and reliable
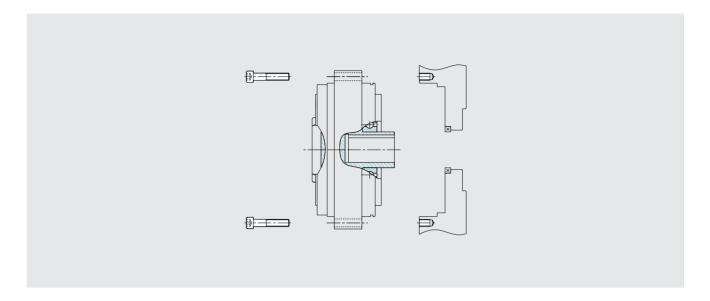
③Assembly of RV Reducer with the Output Flange

Install an output flange at the output end of the RV reducer. Secure it in place by tightening the bolts (recommended grade 12.9) to lock the output end

3.Installation of WF4CF-DA Series Reducers
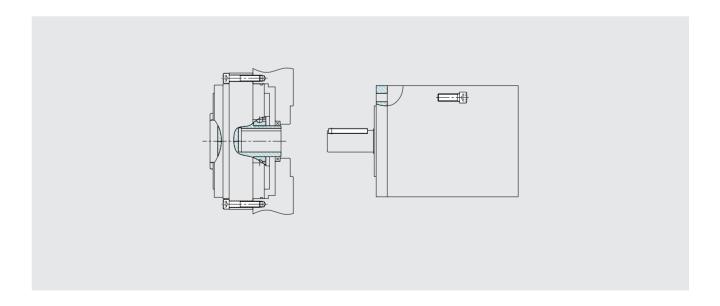
①Assembly of RV Reducer and Motor Flange
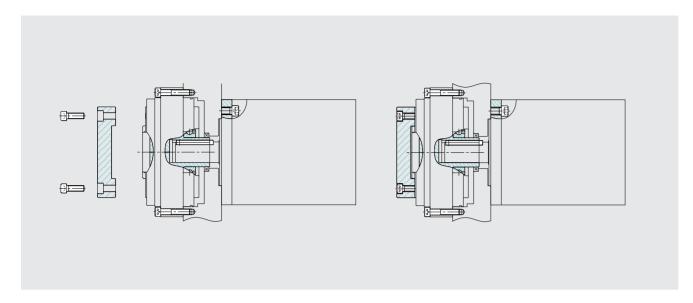
When using the WF4CF-DA series reducer, first assemble the RV reducer with the motor flange, and secure it with bolts (grade 12.9 is recommended) to ensure a fixed torque

②Assembly of RV Reducer and Motor

Insert the motor shaft of the servo motor into the input end of the RV reducer, and secure the servo motor to the motor flange with bolts (grade 12.9 is recommended) to ensure a fixed torque
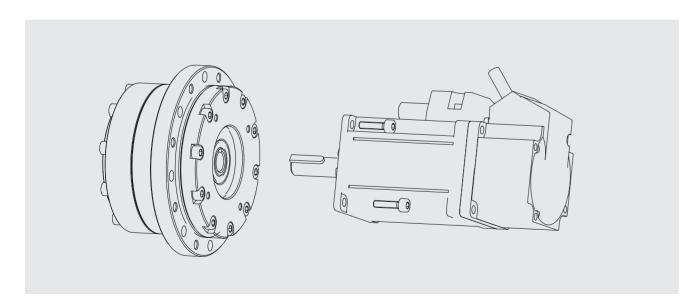
③Assembly of RV Reducer with Output Flange

Install an output flange at the output end of the RV reducer, and secure it in place using bolts (recommended grade 12.9) to ensure a locked output end

## 5. Installation of WCF Series Reducers

When using the WCF series reducer, the servo motor can be directly connected to the RV reducer, and then secured with bolts (recommended grade 12.9) to ensure a fixed connection

6.Bolt Tightening Torque and Allowable Transmitted Torque

The gearbox is recommended to use hexagon socket head cap screws to transmit torque. The bolt models used in the gearbox and their tightening torques are shown in the table below. To prevent the hexagon socket head cap screws from loosening and damaging the bolt cross-sections, the use of flat washers with the hexagon

Nominal Diameter x Pitch (mm) of Hex Socket Bolt	Tightening Torque N.m	Preload Force (N)	Bolt Parameters Used
M5×0.8	9.01±0.49	9310	
M6×1.0	15.6±0.78	13180	**Hex Socket Bolt**
M8×1.25	37.2±1.86	23960	**GB/T 70.1-2008**
M10×1.5	73.5±3.43	38080	**Property Class 12.9**
M12×1.75	128.4±6.37	55100	
M14×2.0	204.8±10.2	75860	**Thread Grade** **GB/T 197-1981 6g**
M16×2.0	318.5±15.9	103410	Note: The above tightening torques are for
M18×2.5	441.0±22.1	126720	bolts made of steel and cast iron materials

The formula for calculating the allowable transmitted torque of the bolt is

$$T_1 = F \times \frac{D_1}{2} \times \mu \times n_1$$

T_1: Allowable transmitted torque of the bolt (Nm)

F : Bolt preload force (N)

D_1: Bolt mounting pitch circle diameter (mm)

μ : Coefficient of friction μ =0.15 for mating surfaces with lubricating grease
μ =0.20 for degreased mating surfaces

n_1: Number of bolts

7.Installation and Setup

①Avoid using in locations with direct contact with rain; (If use outdoor or in locations with dust and water droplets is required, please consult with us before purchasing)

②Please use in an environment temperature between -10℃~40℃;

③Please install on a sturdy, vibration-free surface, and secure it firmly with bolts, ensure accessibility for future maintenance and inspection

8.Precautions Before Starting

Before the first operation, please confirm the rotation direction of the output shaft and gradually increase the load on the output end

9.Lubrication Requirements

①The gearbox is pre-filled with the specified amount of grease at the factory, so it can be installed and used directly after delivery

②During the first operation, please confirm the output shaft rotation direction first, then gradually increase the load on the output end

③The standard replacement time for the RV reducer is 20,000 hours of operation, due to the aging of the lubricant. However, if used in environments with temperatures above 40℃, please shorten the replacement interval for the lubricant based on its aging and contamination levels

10.Routine Inspection, Fault Diagnosis, and Troubleshooting
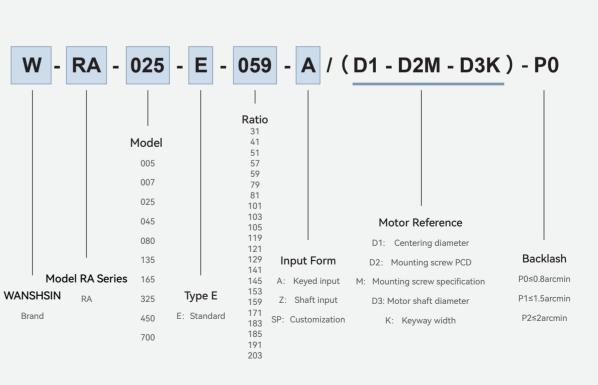
Inspection Items	Faults	Possible Causes	Troubleshooting Methods
Noise	Abnormal or rapidly changing noise	Gearbox damage	Replace the gearbox
		Improper assembly	Inspect the assembly process
Vibration	Increased or rapidly changing vibration	Gearbox damage	Replace the gearbox
		Improper assembly	Inspect the assembly process
Surface	Sudden rise in surface temperature	Lubrication issue	Add or replace the lubricating grease
		Load or speed exceeding rated requirements	Reduce torque/speed to within the rated range
Temperature	Loose bolts	Insufficient bolt tightening torque	Tighten the bolts to the required torque
Tightness of fastening bolts Oil leakage	Oil leakage at mating surfaces	Presence of foreign matter at mating surfaces	Clean the foreign matter and reassemble
		Seal failure or damage	Replace the seals
Precision	Increased backlash	Gear wear	Compensate the system or replace the gearbox

WRA SERIES

General Notice:

◎ Type, Model, Torque

◎ Ratio or output speed

◎ Working conditions and connection methodsion

◎ Quantity and application

◎ Input method and input speed

◎ Motor brand and model or flange and motor shaft size

W - RA - 025 - E - 059 - A /（D1 - D2M - D3K）- P0

Model RA Series

WANSHSIN — RA
Brand

Model
005
007
025
045
080
135
165
325
450
700

Type E
E: Standard

Ratio
31
41
51
57
59
79
81
101
103
105
119
121
129
141
145
153
159
171
183
185
191
203

Input Form
A: Keyed input
Z: Shaft input
SP: Customization

Motor Reference
D1: Centering diameter
D2: Mounting screw PCD
M: Mounting screw specification
D3: Motor shaft diameter
K: Keyway width

Backlash
P0≤0.8arcmin
P1≤1.5arcmin
P2≤2arcmin

WRA Series Parameters

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
005E	41 59 101	50	1750	P0-P2	1.5	8000	18	3000	97.5	282	245	885
007E	31 51 59 79 101 103	83	1750	P0-P2	1.5	8000	20	3000	415	392	675	1470
025E	59 79 81 121 141 153	245	1750	P0-P2	1.5	8000	49	3000	515	1764	1102.5	3920
045E	57 79 81 105 121 153	460	1750	P0-P2	1.5	8000	108	3000	1158	3332	2070	5194
080E	59 81 105 121 153	835	1750	P0-P2	1.5	8000	196	3000	2505	4312	3757.5	7840
135E	41 59 79 81 121	1400	1750	P0-P2	1.5	8000	196	3000	2083	4312	6300	7840
165E	59 79 81 101 121 129 145 171	1615	1750	P0-P2	1.5	8000	392	3000	4043	7840	7267.5	14700
325E	79 81 141 171 185	3595	1750	P0-P2	1.5	8000	980	3000	7963	14112	16177.5	19600
450E	59 81 101 129 171 191	5100	1750	P0-P2	1.5	8000	1176	3000	11025	17640	22950	24500
700E	105 119 159 183 203	7500	1750	P0-P2	1.5	8000	1176	3000	22500	17640	33750	24500

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WRA-005E-XX Outline Drawing

Applicable motor shaft diameter	φ8-φ10
Applicable motor power	0.05-0.1KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
005E	41 59 101	50	1750	P0-P2	1.5	8000	18	3000	97.5	282	242	885

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WRA-007E-XX Outline Drawing

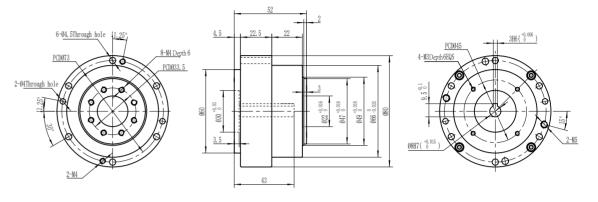| Applicable motor shaft diameter	φ11-φ14
Applicable motor power	0.2-0.6KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
007E	31 51 59 79 101 103	83	1750	P0-P2	1.5	8000	20	3000	415	392	675	1470

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WRA-025E-XX Outline Drawing

Applicable motor shaft diameter	φ19-φ22
Applicable motor power	0.75-1.8KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
025E	59											
	79											
	81	245	1750	P0-P2	1.5	8000	49	3000	515	1764	1102.5	3920
	121											
	141											
	153											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WRA-045E-XX Outline Drawing
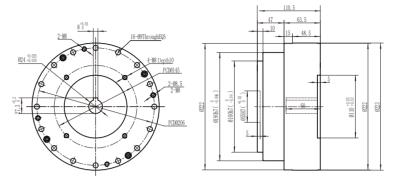
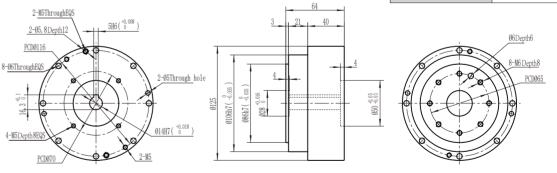| Applicable motor shaft diameter	φ22-φ28
Applicable motor power	1.0-5.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
045E	57											
	79											
	81	460	1750	P0-P2	1.5	8000	108	3000	1158	3332	2070	5194
	105											
	121											
	153											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WRA-080E-XX Outline Drawing

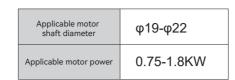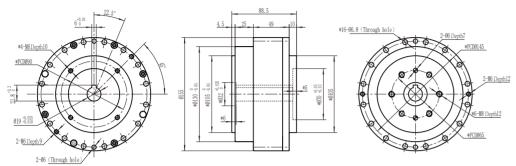| Applicable motor shaft diameter	φ22-φ35
Applicable motor power	1.3-5.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
080E	59											
	81											
	105	835	1750	P0-P2	1.5	8000	196	3000	2505	4312	3757.5	7840
	121											
	153											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WRA-135E-XX Outline Drawing

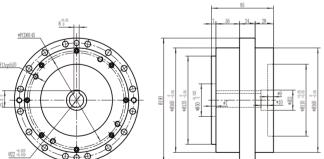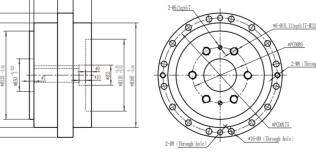| Applicable motor shaft diameter	φ22-φ35
Applicable motor power	1.8-5.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
135E	41											
	59											
	79	1400	1750	P0-P2	1.5	8000	196	3000	2083	4312	6300	7840
	81											
	121											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WRA-165E-XX Outline Drawing

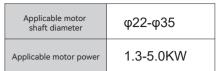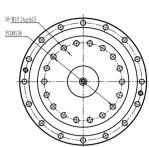| Applicable motor shaft diameter	φ35-φ42
Applicable motor power	3.0-7.5KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
165E	59	1615	1750	P0-P2	1.5	8000	392	3000	4043	7840	7267.5	14700
	79											
	81											
	101											
	121											
	129											
	145											
	171											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WRA-325E-XX Outline Drawing

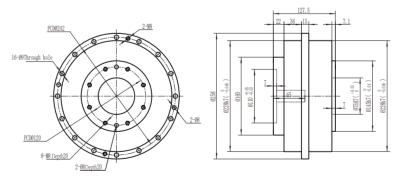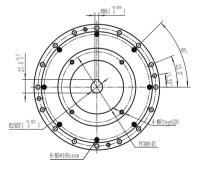| Applicable motor shaft diameter	φ35-φ55
Applicable motor power	4.5-15KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
325E	79	3595	1750	P0-P2	1.5	8000	980	3000	7963	14112	16177.5	19600
	81											
	141											
	171											
	185											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WRA-450E-XX Outline Drawing

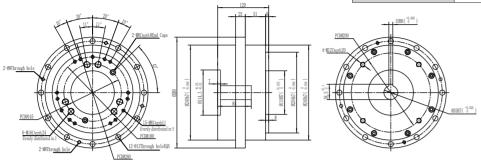| Applicable motor shaft diameter	φ42-φ55
Applicable motor power	7.5-15KW
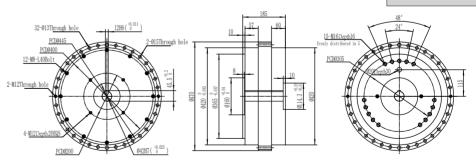
Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
450E	59	5100	1750	P0-P2	1.5	8000	1176	3000	11025	17640	22950	24500
	81											
	101											
	129											
	171											
	191											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WRA-700E-XX Outline Drawing

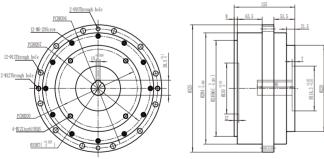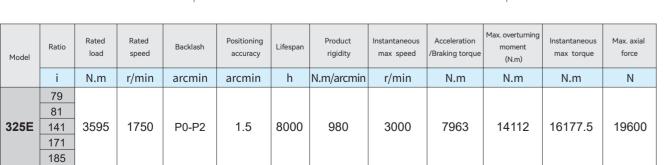| Applicable motor shaft diameter	φ42-φ55
Applicable motor power	11-15KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
700E	105	7500	1750	P0-P2	1.5	8000	1176	3000	22500	17640	33750	24500
	119											
	159											
	183											
	203											
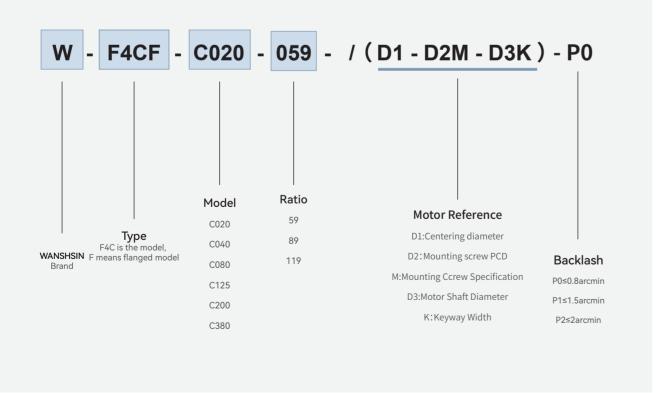
*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WF4CF-C SERIES

General Notice:
◎ Type, Model, Torque
◎ Ratio or output speed
◎ Working conditions and connection methods
◎ Quantity and application equipment
◎ Input mode and input speed
◎ Motor brand model or flange and motor shaft size
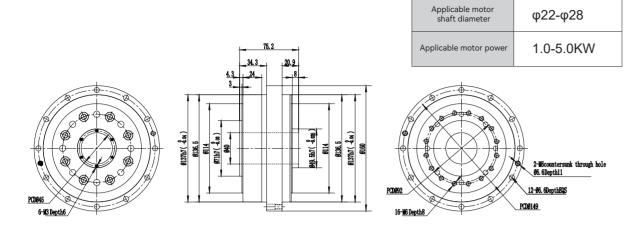
W - F4CF - C020 - 059 - /（D1 - D2M - D3K）- P0

Type
WANSHSIN
Brand
F4C is the model,
F means flanged model

Model
C020
C040
C080
C125
C200
C380

Ratio
59
89
119

Motor Reference
D1：Centering diameter
D2：Mounting screw PCD
M：Mounting Ccrew Specification
D3：Motor Shaft Diameter
K：Keyway Width

Backlash
P0≤0.8arcmin
P1≤1.5arcmin
P2≤2arcmin

WF4CF-C Series Parameters

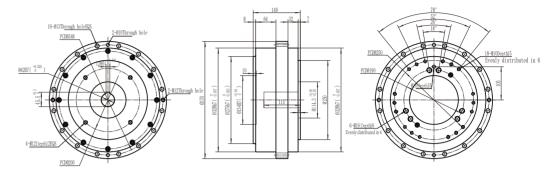| Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
C020	59	207	1750	P0-P2	1.5	8000	49	3000	515	1764	1102.5	3920
	89											
	119											
C040	59	396	1750	P0-P2	1.5	8000	108	3000	1158	3332	2070	5194
	89											
	119											
C080	59	754	1750	P0-P2	1.5	8000	196	3000	2505	4312	3757.5	7840
	89											
	119											
C125	59	1275	1750	P0-P2	1.5	8000	196	3000	2083	4312	6300	7840
	89											
	119											
C200	59	2055	1750	P0-P2	1.5	8000	200	3000	4110	14112	9247.5	14700
	89											
	119											
C380	59	3713	1750	P0-P2	1.5	8000	980	3000	7963	17640	16177.5	19600
	89											
	119											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WF4CF-C020-XX Outline Drawing

Applicable motor shaft diameter	φ22-φ28
Applicable motor power	1.0-5.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
C020	59	207	1750	P1-P2	1.5	8000	49	3000	515	1764	1102.5	3920
	89											
	119											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin, P1≤1.5arcmin, P2≤2arcmin

WF4C-C040-XX Outline Drawing

Applicable motor shaft diameter	φ22-φ35
Applicable motor power	1.3-5.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
C040	59	396	1750	P1-P2	1.5	8000	108	3000	1158	3332	2070	5194
	89											
	119											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin, P1≤1.5arcmin, P2≤2arcmin

WF4CF-C080-XX Outline Drawing

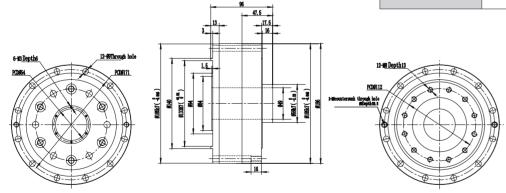| Applicable motor shaft diameter	φ22-φ28
Applicable motor power	1.0-5.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
C080	59	754	1750	P1-P2	1.5	8000	196	3000	2505	4312	3757.5	7840
	89											
	119											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin, P1≤1.5arcmin, P2≤2arcmin

WF4CF-C125-XX Outline Drawing
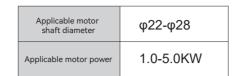
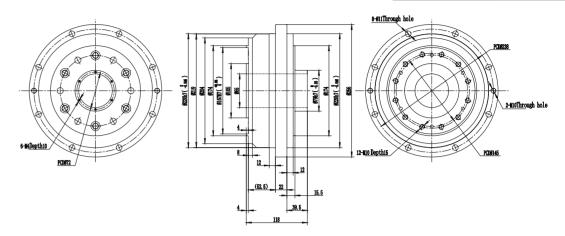| Applicable motor shaft diameter	φ22-φ35
Applicable motor power	1.3-5.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
C125	59	1275	1750	P1-P2	1.5	8000	196	3000	2083	4312	6300	7840
	89											
	119											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin, P1≤1.5arcmin, P2≤2arcmin

WF4CF-C200-XX Outline Drawing
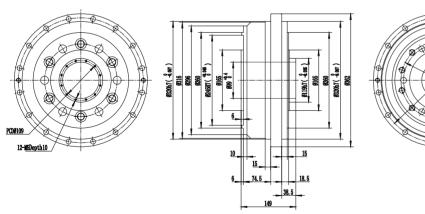
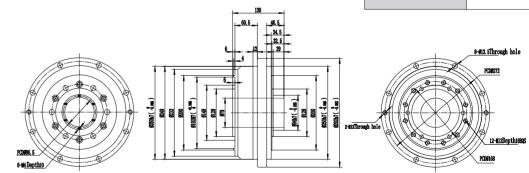|	Applicable motor shaft diameter	φ22-φ28
	Applicable motor power	1.0-5.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
C200	59 89 119	2055	1750	P1-P2	1.5	8000	200	3000	4110	14112	9247.5	14700

*The backlash P0-P2 corresponds to——P0≤0.8arcmin, P1≤1.5arcmin, P2≤2arcmin

WF4CF-C380-XX Outline Drawing

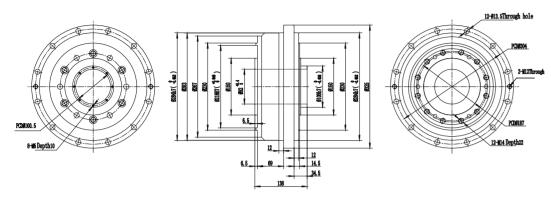|	Applicable motor shaft diameter	φ22-φ35
	Applicable motor power	1.3-5.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
C380	59 89 119	3713	1750	P1-P2	1.5	8000	980	3000	7963	17640	16177.5	19600
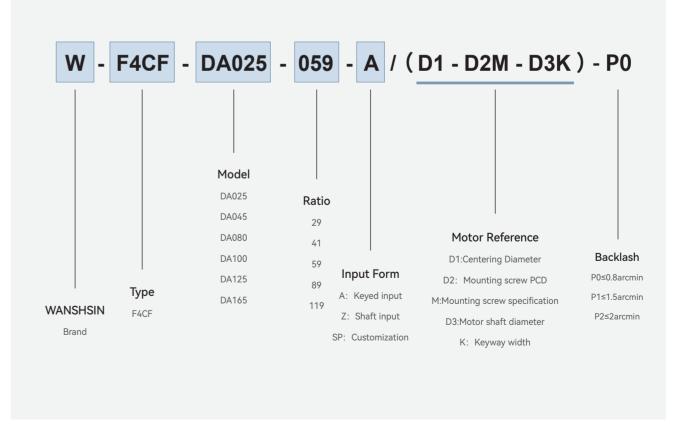
*The backlash P0-P2 corresponds to——P0≤0.8arcmin, P1≤1.5arcmin, P2≤2arcmin
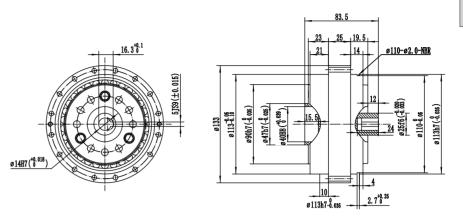
WF4CF-DA SERIES

General Notice:

◎ Type, Model, Torque

◎ Ratio or output speed

◎ Working conditions and connection methodsion

◎ Quantity and application

◎ Input method and input speed

◎ Motor brand and model or flange and motor shaft size

W - F4CF - DA025 - 059 - A / （D1 - D2M - D3K ）- P0

WANSHSIN

Brand

Type

F4CF

Model

DA025
DA045
DA080
DA100
DA125
DA165

Ratio

29
41
59
89
119

Input Form

A: Keyed input

Z: Shaft input

SP: Customization

Motor Reference

D1:Centering Diameter

D2: Mounting screw PCD

M:Mounting screw specification

D3:Motor shaft diameter

K: Keyway width

Backlash

P0≤0.8arcmin

P1≤1.5arcmin

P2≤2arcmin

## WF4CF-DA Series Parameters

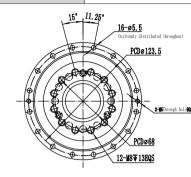| Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
DA025	41	245	1750	P0-P2	1.5	8000	49	3000	515	1764	1102.5	3920
	59											
	89											
	119											
DA045	29	460	1750	P0-P2	1.5	8000	108	3000	1158	3332	2070	5194
	41											
	59											
	89											
	119											
DA080	29	835	1750	P0-P2	1.5	8000	196	3000	2505	4312	3757.5	7840
	41											
	59											
	89											
	119											
DA100	41	1000	1750	P0-P2	1.5	8000	258	3500	2550	4500	3950	8000
	59											
	89											
	119											
DA125	29	1225	1750	P0-P2	1.5	8000	325	3500	3062	4500	4125	8000
	41											
	59											
	89											
	119											
DA165	41	1615	1750	P0-P2	1.5	8000	392	3000	4043	7840	7267.5	14700
	59											
	89											
	119											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WF4CF-DA025-XX Outline Drawing

Applicable motor shaft diameter	φ14
Applicable motor power	0.4KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
DA25	41	245	1750	P0-P2	1.5	8000	49	3000	515	1764	1102.5	3920
	59											
	89											
	119											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WF4CF-DA045-XX Outline Drawing

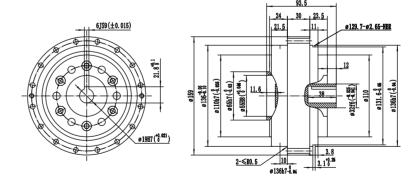| Applicable motor shaft diameter	φ19-φ20
Applicable motor power	0.75KW-1.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
DA45	29	460	1750	P0-P2	1.5	8000	108	3000	1158	3332	2070	5194
	41											
	59											
	89											
	119											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WF4CF-DA080-XX Outline Drawing

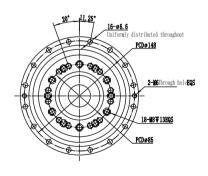| Applicable motor shaft diameter	φ22-φ27
Applicable motor power	1.0KW-3.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
DA80	29	835	1750	P0-P2	1.5	8000	196	3000	2505	4312	3757.5	7840
	41											
	59											
	89											
	119											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WF4CF-DA125-XX Outline Drawing

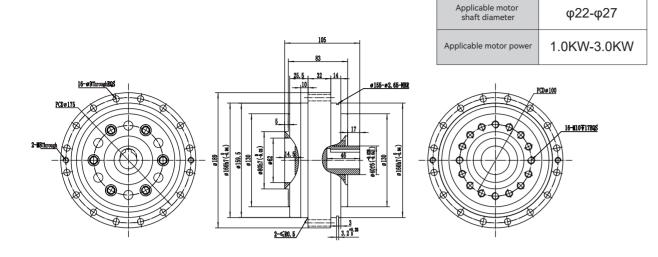| Applicable motor shaft diameter	φ24-φ36
Applicable motor power	2KW-7.5KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
DA125	29	1225	1750	P0-P2	1.5	8000	325	3500	3062	4500	4125	8000
	41											
	59											
	89											
	119											

* The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WF4CF-DA100-XX Outline Drawing

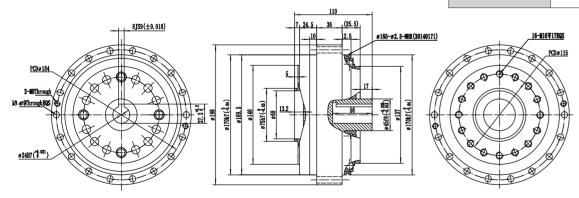| Applicable motor shaft diameter	φ24-φ32
Applicable motor power	1.3KW-3.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
DA100	41	1000	1750	P0-P2	1.5	8000	259	3500	2550	4500	3950	8000
	59											
	89											
	119											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WF4CF-DA165-XX Outline Drawing

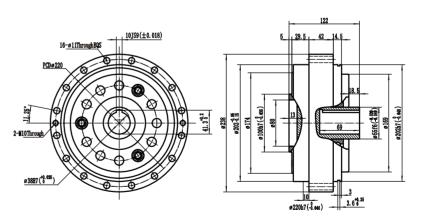| Applicable motor shaft diameter	φ24-φ41
Applicable motor power	3KW-7.5KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
DA100	41	1615	1750	P0-P2	1.5	8000	392	3000	4043	7840	7267.5	14700
	59											
	89											
	119											

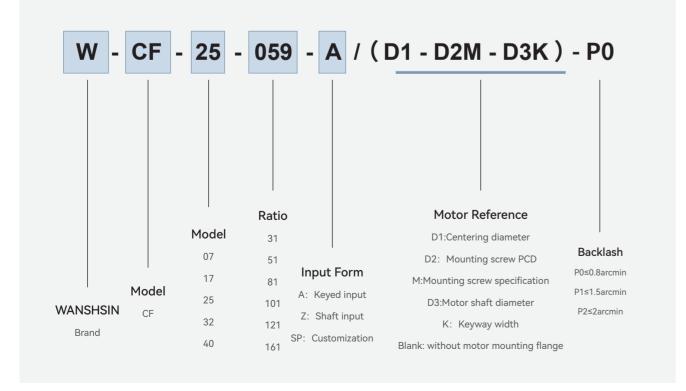*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WCF SERIES

General Notice:

◎ Type, Model, Torque

◎ Ratio or output speed

◎ Working conditions and connection methods

◎ Quantity and application equipment

◎ Input mode and input speed
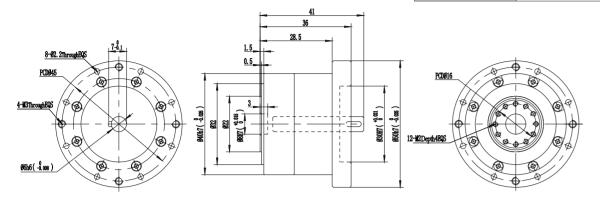
◎ Motor brand model or flange and motor shaft size

W - CF - 25 - 059 - A / (D1 - D2M - D3K) - P0

WANSHSIN	Model	Model	Ratio	Input Form	Motor Reference	Backlash
Brand	CF	07	31	A: Keyed input	D1:Centering diameter	P0≤0.8arcmin
		17	51	Z: Shaft input	D2: Mounting screw PCD	P1≤1.5arcmin
		25	81	SP: Customization	M:Mounting screw specification	P2≤2arcmin
		32	101		D3:Motor shaft diameter	
		40	121		K: Keyway width	
			161		Blank: without motor mounting flange	

WCF Series Parameters

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
07	31	6	1750	P0-P2	1.5	8000	/	3000	12	/	27	/
	51											
	81											
17	31	30	1750	P0-P2	1.5	8000	/	3000	60	/	135	/
	51											
	81											
25	31	80	1750	P0-P2	1.5	8000	/	3000	160	/	360	/
	51											
	81											
	101											
	121											
32	31	170	1750	P0-P2	1.5	8000	/	3000	340	/	765	/
	51											
	81											
	101											
	121											
	161											
40	31	300	1750	P0-P2	1.5	8000	/	3000	600	/	1350	/
	51											
	81											
	101											
	121											
	161											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin, P1≤1.5arcmin, P2≤2arcmin

WCF-07-XX Outline Drawing

Applicable motor shaft diameter	φ8
Applicable motor power	0.1KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
07	31	6	1750	P0-P2	1.5	8000	/	3000	12	/	27	/
	51											
	81											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WCF-17-XX Outline Drawing

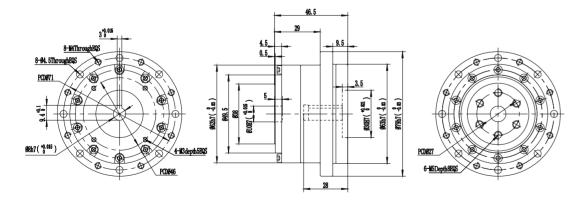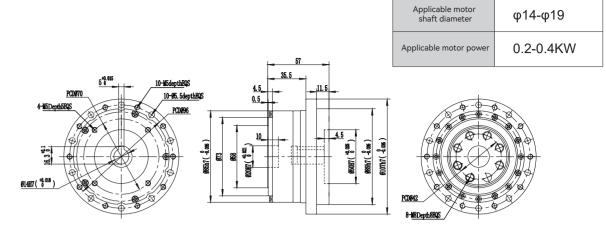| Applicable motor shaft diameter	φ8
Applicable motor power	0.1KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
17	31	30	1750	P0-P2	1.5	8000	/	3000	60	/	135	/
	51											
	81											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WCF-25-XX Outline Drawing

Applicable motor shaft diameter	φ14-φ19
Applicable motor power	0.2-0.4KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
25	31	80	1750	P0-P2	1.5	8000	/	3000	160	/	360	/
	51											
	81											
	101											
	121											

*The backlash P0-P2——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WCF-32-XX Outline Drawing

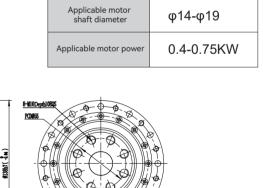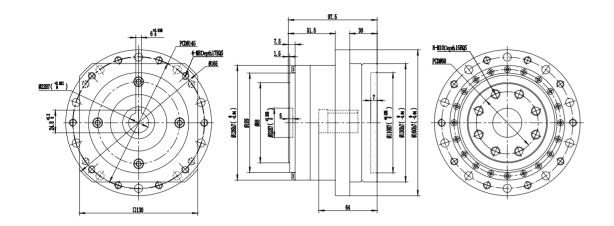| Applicable motor shaft diameter	φ14-φ19
Applicable motor power	0.4-0.75KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
32	31	170	1750	P0-P2	1.5	8000	/	3000	340	/	765	/
	51											
	81											
	101											
	121											
	161											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin，P1≤1.5arcmin，P2≤2arcmin

WCF-40-XX Outline Drawing

Applicable motor shaft diameter	φ19-φ22
Applicable motor power	0.75-2.0KW

Model	Ratio	Rated load	Rated speed	Backlash	Positioning accuracy	Lifespan	Product rigidity	Instantaneous max speed	Acceleration /Braking torque	Max. overturning moment (N.m)	Instantaneous max torque	Max. axial force
	i	N.m	r/min	arcmin	arcmin	h	N.m/arcmin	r/min	N.m	N.m	N.m	N
40	31	300	1750	P0-P2	1.5	8000	/	3000	600	/	1350	/
	51											
	81											
	101											
	121											
	161											

*The backlash P0-P2 corresponds to——P0≤0.8arcmin, P1≤1.5arcmin, P2≤2arcmin

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