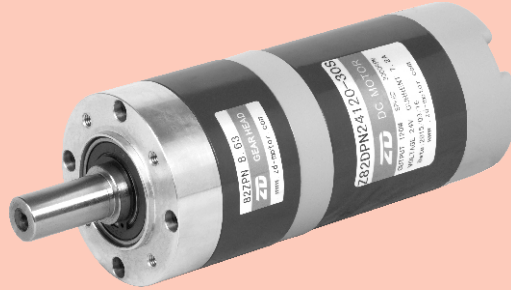
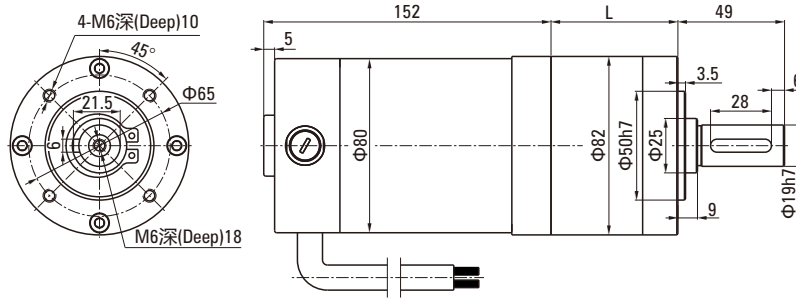


## ■ ZPNΦ82 BRUSH有刷

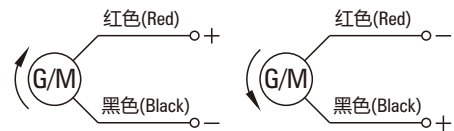


## ■ 外径82直流有刷行星减速电机外形图纸 Outside Diameter 82 DC Brush Motor



电机型号 Motor Type	减速箱型号 Gearbox Model	减速比 Gear Ratio	L尺寸(mm) Dimension
Z82DPN	82PN□	3.65~8.63	63.70
		13.53~58.22	80.50
		67.08~392.98	103.2

电机接线图 Wiring Diagram



## ■ 有刷直流电机技术参数 Blush DC Motor Technical Data

电机型号 Motor Type	电压 Voltage V	额定功率 Rated Power W	空载电流 No-load Current A	空载转速 No-load Speed RPM	额定电流 Rated Current A	额定转速 Rated Speed RPM	额定力矩 Rated Torque N.m	电机寿命 Motor Life H
Z82DPN1290-30S	12	90	2.5	3500	10.5	3000	0.287	2000
Z82DPN24120-30S	24	120	2.0	3400	7.20	3000	0.382	2000
Z82DPN48180-30S	48	180	1.5	3400	5.50	3000	0.573	2000

## ■ 有刷直流行星减速电机技术参数 Blush DC Planetary Gear Motor Technical Data-Z82DPN24120-30S

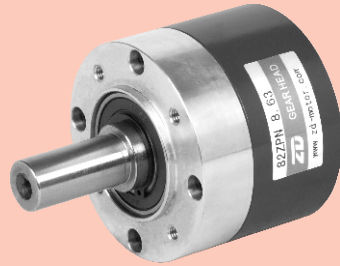
减速比 Ratio	3.65	5.36	6.55	8.63	13.53	18.92	24.65	28.05	33.92	44.69	58.22	67.08	81.11
输出轴转速 r/min Output shaft speed	822	560	458	348	222	159	122	107	89	67	52	45	37
允许力矩 N.m Allowable torque	1.30	1.80	2.30	3.00	4.20	5.90	7.60	8.70	10.5	13.8	18.0	18.7	22.6
减速级数 Reduction stage	1	1	1	1	2	2	2	2	2	2	2	3	3

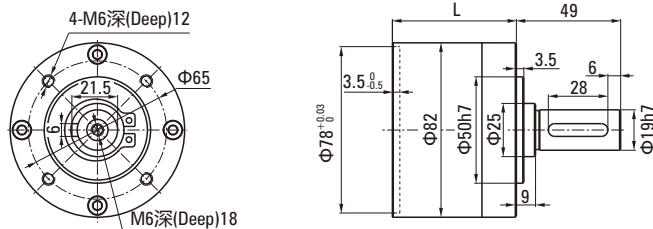
减速比 Ratio	91.36	102.88	118.98	127.74	145.36	165.64	191.56	231.61	301.68	392.98			
输出轴转速 r/min Output shaft speed	33	29	25	24	21	18	16	13	9.9	7.6			
允许力矩 N.m Allowable torque	25.5	28.7	33.2	35.6	40.5	46.2	53.4	64.6	84.0	84.0			
减速级数 Reduction stage	3	3	3	3	3	3	3	3	3	3			

# ZPN系列 ZPN SERIES

## ■ ZPNΦ82



### ■ 外径82行星减速器 Outdiameter 82mm Planetary Gearbox

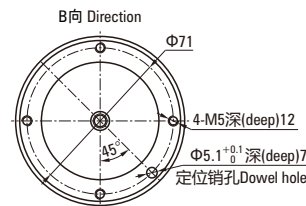
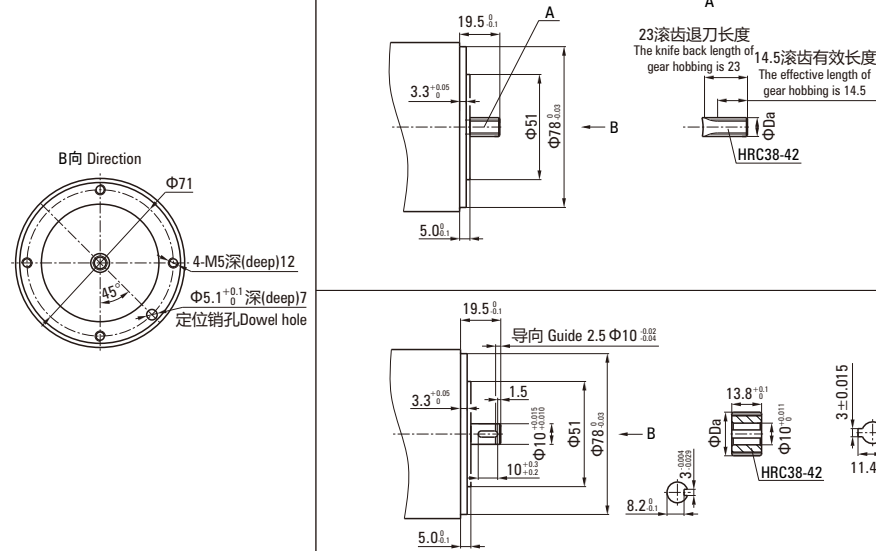


减速箱型号 Gearbox Model	减速比 Gear Ratio	L尺寸(mm) Dimension
82ZPN□	一级Stage1	3.65~8.63
	二级Stage2	14~58
	三级Stage3	67~393

传动级数 Transmission Stage	一级 Stage 1	二级 Stage 2	三级 Stage 3
传动效率 Transmission efficiency	90%	81%	73%
最大径向负载 Max radial load	1000N	1000N	1000N
最大轴向负载 Max axial load	200N	200N	200N
额定扭矩 Rated torque	20N.m	60N.m	120N.m
瞬间承受扭矩 Instant beared torque	2倍与额定扭矩 Two times of the rated torque		
工作温度 Operating temperature	-10°C ~ +80°C		
润滑方式 Lubrication type	终生润滑 Lifetime lubrication		
安装方式 Mounting type	任意安装 Any		
推荐输入转速 Recommend input speed	≤3000RPM		
输入与输出转向 Input and output direction	相同 Same direction		
噪音 Noise	< 60dB(A) (L=1m, 3000rpm)		

#### 电机配合方案 Motor Matching Scheme

Da	一级速比 One stage of gear ratio	二级速比 Second stage of gear ratio	三级速比 Third stage of gear ratio
	Φ14.25 <sup>+0.05</sup> <sub>-0.08</sub>	5.36	-
Φ11.55 <sup>+0.05</sup> <sub>-0.08</sub>	6.55	-	118.98
		28.05	145.36
Φ9.12 <sup>+0.05</sup> <sub>-0.08</sub>	8.63	44.69	165.64
		58.22	191.56
		-	231.61
		-	301.68
		-	392.98
Φ21.45 <sup>+0.05</sup> <sub>-0.08</sub>	3.65	13.53	67.08
		18.92	81.11
		24.65	91.36
		-	127.74



## 传动型行星 PLANETARY GEAR MOTOR

- 采用双支撑结构输出轴，使齿轮箱的承载扭力大大提高。

Adopt dual supporting structure for output shaft so that the max torque of gearbox is increased a lot.

- 太阳轮与行星架采用花键联接方式，极大增强了内部齿轮箱承受扭矩，提高了整机的使用寿命。

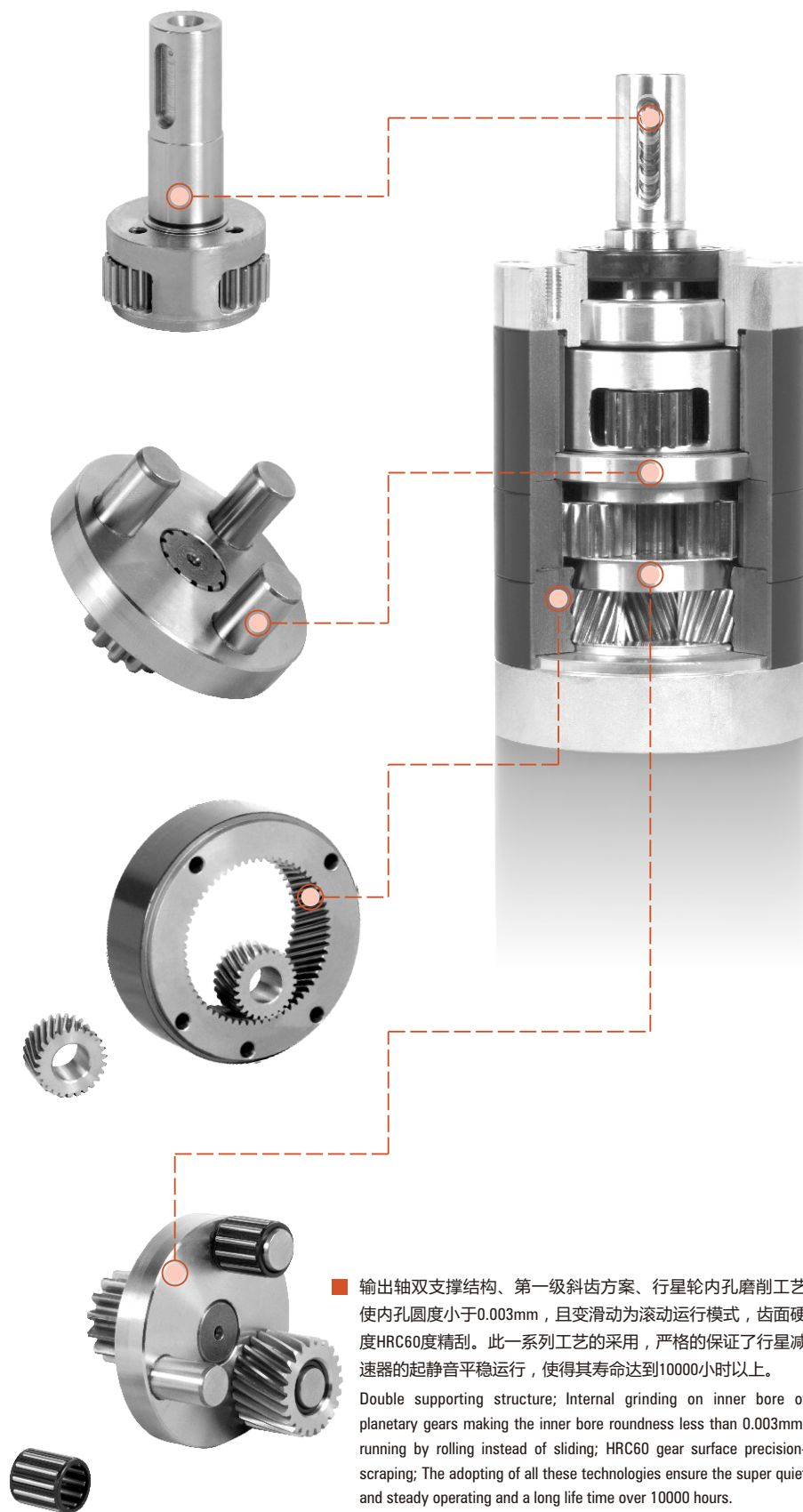
Sun wheel and planetary wheel are connected by spline which increase the max torque of gearbox and lengthen the life.

- 与电机连接的输入级采用斜齿，在高转速状态下，使齿轮箱的传动更加平稳，噪音更低。
- 齿轮箱内齿轮部分采用分段式结构，是齿轮箱的速比分布更广，整机结构设计更灵活。
- 齿轮箱与电机连接采用止口定位，轴向锁紧螺丝，使整机配合更精密，噪音更低。

• We use helical gear at input stage which make the noise low and run smoothly in high speed. • The inner gear ring is separated so that we can make more ratio and the design is flexible. • Gearbox and motor are located by a seam fix by screw in axial which increase the matching precision and reduce noise.

- 行星轮内孔采用滚针保持架，用滚动摩擦代替滑动摩擦，使齿轮箱的寿命更加长。

We use rolling pin holder inside planetary wheel. we use rolling friction instead of sliding grinding so the life of gearbox is much longer.



- 输出轴双支撑结构、第一级斜齿方案、行星轮内孔磨削工艺使内孔圆度小于0.003mm，且变滑动为滚动运行模式，齿面硬度HRC60度精刮。此一系列工艺的采用，严格的保证了行星减速器的起静音平稳运行，使得其寿命达到10000小时以上。

Double supporting structure; Internal grinding on inner bore of planetary gears making the inner bore roundness less than 0.003mm; running by rolling instead of sliding; HRC60 gear surface precision-scraping; The adopting of all these technologies ensure the super quiet and steady operating and a long life time over 10000 hours.

# 品名阅读方法 型番の説明 TYPE AND MOTOR NUMBER

モーター

## 电动机 Motor

Z    62    BLDPN    24    60    -    30S  
①    ②    ③    ④    ⑤       ⑥

电动机参数 Motor Parameters モーターデータ	①	宁波中大力德智能传动股份有限公司标识 ZD Logo <a href="#">ZDのロゴ</a> 电机外径尺寸 Motor Outline Dimension: <a href="#">モーター外径寸法</a> 电机外径: <a href="#">モーター外径</a>
	②	22:电机外径 Outer diameter Φ22mm    32:电机外径 Outer diameter Φ32mm    42:电机外径 Outer diameter Φ42mm 52:电机外径 Outer diameter Φ52mm    62:电机外径 Outer diameter Φ62mm    72:电机外径 Outer diameter Φ72mm 82:电机外径 Outer diameter Φ82mm    105:电机外径 Outer diameter Φ105mm    120:电机外径 Outer diameter Φ120mm
	③	电机型式 Motor Type: <a href="#">モータータイプ</a> BLDPN:无刷直流电机, 配行星减速箱式 BLDC motor, matched with planetary gearbox <a href="#">BLDPN: ブラシレスDCモーター+遊星減速機</a> DPN:有刷直流电机, 配行星减速箱式 Brush DC motor, matched with planetary gearbox <a href="#">DPN: ブラシ付DCモーター+遊星減速機</a>
	④	电机使用额定电压 Rated Voltage For The Motor Using 12:12V <a href="#">モーターの定格電圧</a> 24:24V
	⑤	电机输出额定功率 Rated Output Power For The Motor 40:40W <a href="#">モーターの定格出力</a> 60:60W
	⑥	电机输出额定转速 Rated Output Speed For The Motor 20S:2000RPM <a href="#">モーターの定格回転数</a> 30S:3000RPM

減速機

## 减速机 Reducer

62    ZPN    303  
①    ②    ③

①	减速机外径尺寸 Motor Outline Dimension: <a href="#">減速機外径寸法</a> 减速机外径: <a href="#">減速機外径</a> 22:减速机外径 Gear box external diameter Φ22mm    32:减速机外径 Gear box external diameter Φ32mm 42:减速机外径 Gear box external diameter Φ42mm    52:减速机外径 Gear box external diameter Φ52mm 62:减速机外径 Gear box external diameter Φ62mm    72:减速机外径 Gear box external diameter Φ72mm 82:减速机外径 Gear box external diameter Φ82mm    105:减速机外径 Gear box external diameter Φ105mm 120:减速机外径 Gear box external diameter Φ120mm
②	类型 Motor Outline Dimension: <a href="#">タイプ</a> ZPN:减速机输入斜齿轮 Gear box input shaft is helical gear <a href="#">ZPN減速機入力はヘリカルギア</a>
③	减速比 Gear Ratio: <a href="#">減速比</a> 例.303:減速比 Reduction ratio:303:1 <a href="#">例えば、303は減速比が303:1</a>