

WPFR

 Series Planetary Gearbox

PRODUCT FEATURES

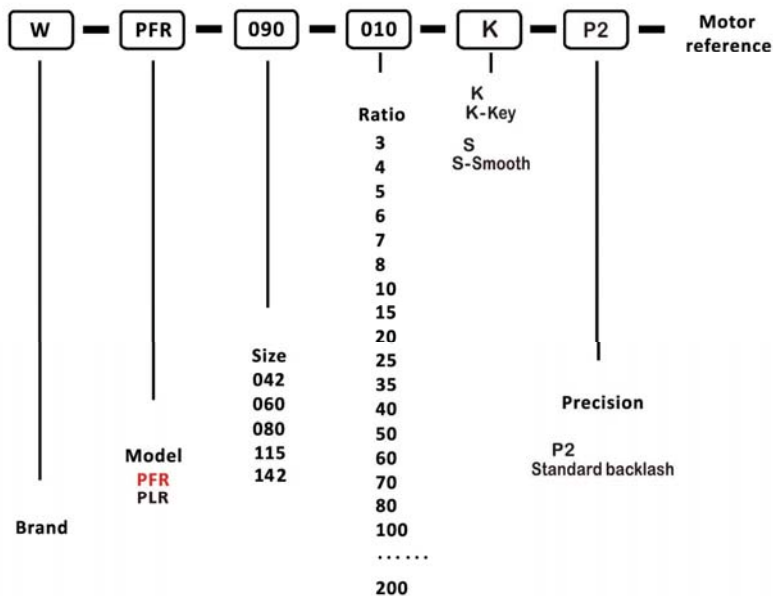
- » Planetary arm bracket and output shaft are one-piece constructed to ensure maximum torsional rigidity.
- » The gears adopt the full-needle design, in order to broaden the contact area and to increase the structure rigidity and the output torque.
- » The mild-steel gears' hardness of adopting surface hardening technology is HRC62, so that the abrasion resistance and impact toughness can achieve best.
- » Because adopting high technology to design the tooth profiles, the best gear tooth profiles are obtained and the noise is reduced.
- » In case to gain power transmission, the maximum clamping force and zero backlash (ultra-precision) are obtained by adopting double-locked method between the gearbox input side and the motor shaft.
- » Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- » High tolerance input speed, more than 8 times higher than straight bevel gear input.
- » The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- » Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.



INDICATION FOR MODEL

SELECTION

GENERAL NOTICES



- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

PLANETARY GEARBOX

● Performance

Specification	Unit	Stage	Ratio	WPFR042	WPFR060	WPFR080	WPFR115	WPFR142
Rated output torque T_{2N}	Nm	1	3	8	18	40	125	290
			4	18	36	90	230	460
			5	16	40	110	260	550
			6	8	20	40	90	340
			7	8	20	40	90	340
			8	5	12	22	70	210
			10	5	12	22	70	210
			12	8	20	40	90	340
			14	8	20	40	90	340
			20	5	12	22	70	210
		2	15	16	36	90	125	550
			25	16	36	90	260	550
			30	16	36	90	125	290
			35	16	36	90	260	550
			40	16	36	90	230	460
			48	18	40	110	230	460
			50	16	36	90	260	550
			60	16	36	90	230	340
			70	16	36	90	230	340
			80	16	36	90	230	460
90	16	-	90	230	290			
100	16	36	90	230	550			
120	8	22	55	125	340			
140	8	22	55	125	340			
160	5	15	50	120	210			
200	5	12	22	70	210			
Emergency stop torque T_{2NOT}	Nm	1,2	3~200	Double rated output torque				
Rated input speed Π_{1N}	rpm	1,2	3~200	4500	4000	3500	3500	3000
Maximum input speed Π_{1B}	rpm	1,2	3~200	10000	8000	6000	6000	4500
Standard backlash P_2	arcmin	1	3~20	≤ 12	≤ 12	≤ 12	≤ 12	≤ 12
		2	15~200	≤ 15	≤ 15	≤ 15	≤ 15	≤ 15
Torsional rigidity	Nm/arcmin	1,2	3~200	0.65	1.8	4.7	11	35
Allowable radial force F_{2aB}	N	1,2	3~200	165	240	400	1240	3700
Allowable axial force F_{2aB}	N	1,2	3~200	135	220	420	1000	3500
Lifespan	hr	1,2	3~200	20000 *				
Efficiency	%	1	3~20	94%				
		2	25~200	91%				
Weight	kg	1	3~20	0.3	0.85	2	6	11
		2	25~200	0.4	0.9	2.3	7.5	13
Working temperature	°C	1,2	3~200	(-10° C +90° C)				
Lubricating				Synthetic lubricating grease				
IP Grade		1,2	3~200	IP65				
Installation direction		1,2	3~200	In any direction				
Noise value ($n_1=3000$, off load)	dB(A)	1,2	3~200	≤ 60	≤ 60	≤ 63	≤ 68	≤ 75

1. Ratio ($i=N_{in}/N_{out}$)

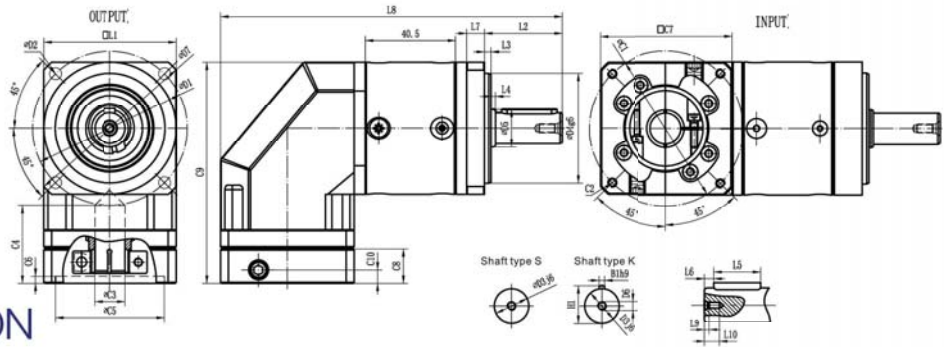
2. Maximum acceleration torque $T_{2B}=60\%$ of T_{2NOT}

3. Output speed 100rpm, acting on the center of the output shaft

● Rotational inertia

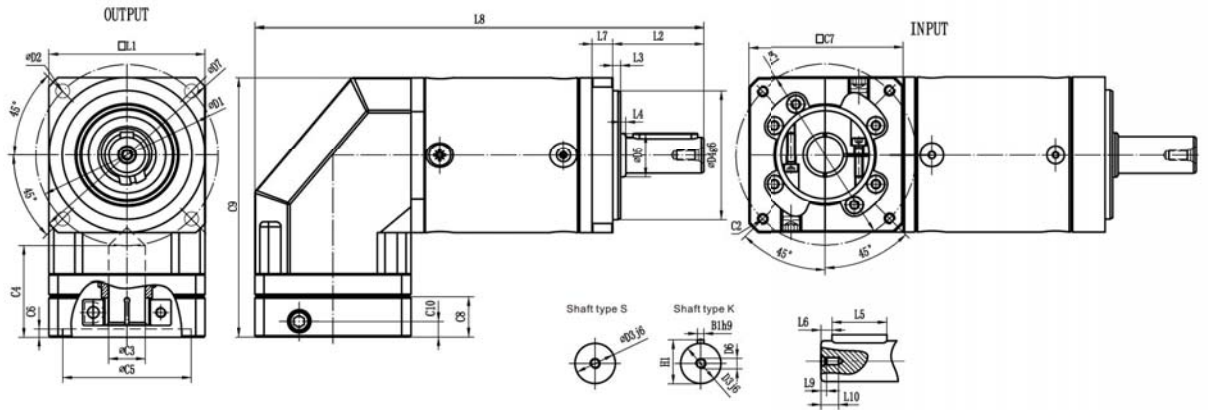
Specification	Unit	Stage	Ratio	WPFR042	WPFR060	WPFR080	WPFR115	WPFR142
Rotational inertia J1	kg.cm ²	1	3~10	0.03	0.135	0.75	2.5	5.8
			12、14	0.03	0.09	0.45	1.3	1.9
			20	0.03	0.09	0.39	1.2	2.73
		2	15	0.015	0.09	0.45	2.4	3.3
			25~100	0.01	0.035	0.2	1.4	2.3
			120~200	0.005	0.035	0.18	1.3	2.1

DIMENSION
SINGLE SECTION



● Dimension(single stage,Ratio i=3~20)

Dimension	WPFR042	WPFR060	WPFR080	WPFR115	WPFR142
D1	-	70	100	130	185
D2	-	5.5	6.5	8.8	11
D3	-	14	20	25	40
D4	-	50	80	110	130
D5	-	17	25	35	55
D6	-	M5	M6	M10	M12
D7	-	80	120	160	230
L1	-	60	90	120	176
L2	-	35	40	55	87
L3	-	3	3	4	5
L4	-	2	1	1	2
L5	-	25	25	40	65
L6	-	2.5	5	5	5
L7	-	8	10	14	15
L8	-	153.5	204	288	340.5
L9	-	4.8	5	7.5	9.5
L10	-	12	18	23	25
C1	-	70	90	145	200
C2	-	M4	M5	M8	M12
C3	-	6-14	14-19	16-24	22-35
C4	-	35	54	81	81
C5	-	50	70	110	114.3
C6	-	3.5	6	14	19
C7	-	60	80	130	180
C8	-	16	30	45.5	57.5
C9	-	100	137	192	246.5
C10	-	9.5	14.5	27	32
B1h9	-	5	6	8	12
H1	-	16	22.5	28	43



DIMENSION

DOUBLE SECTION

- Dimension(double stage,Ratio i=15~200)

Dimension	WPFR042	WPFR060	WPFR080	WPFR115	WPFR142
D1	-	70	100	130	185
D2	-	5.5	6.5	8.8	11
D3	-	14	20	25	32
D4	-	50	80	110	130
D5	-	17	25	35	40
D6	-	M5	M6	M10	M12
D7	-	80	120	160	230
L1	-	60	90	120	176
L2	-	35	40	55	87
L3	-	3	3	4	5
L4	-	2	1	1	2
L5	-	25	25	40	65
L6	-	2.5	4	5	5
L7	-	8	10	14	15
L8	-	172.5	228.5	288	388.5
L9	-	4.8	5	7.5	9.5
L10	-	12	18	23	25
C1	-	70	90	145	200
C2	-	M4	M5	M8	M12
C3	-	6-14	14-19	16-24	22-35
C4	-	35	54	81	81
C5	-	50	70	110	114.3
C6	-	3.5	6	14	19
C7	-	60	80	130	180
C8	-	16	30	45.5	57.5
C9	-	100	137	192	246.5
C10	-	9.5	14.5	27	32
B1h9	-	5	6	8	12
H1	-	16	22.5	28	43