

WAER

 Series planetary gearbox

PRODUCT FEATURES

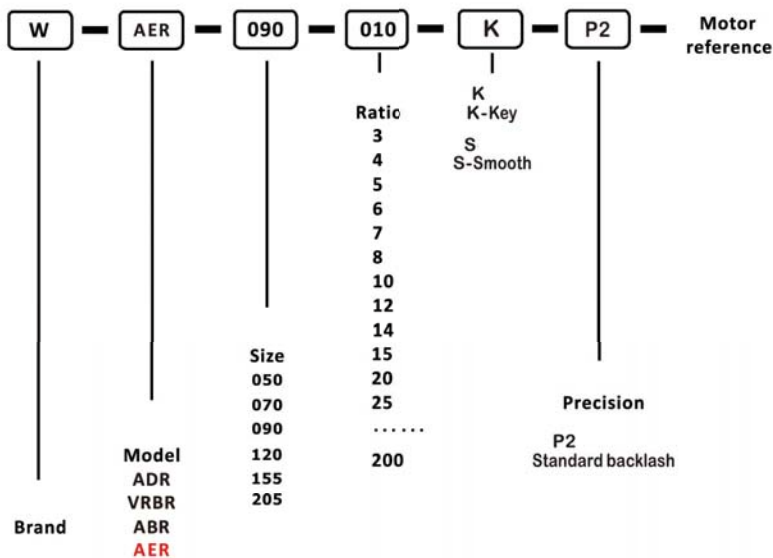
- » Planetary arm bracket and output shaft are one-piece constructed to ensure maximum torsional rigidity.
- » The gears adopt the full-needle design, in order to broaden the contact area and to increasing the structure rigidity and the output torque.
- » The mild-steel gears' hardness of adopting surface 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 are 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

● Performance

Specification	Unit	Stage	Ratio	WAER050	WAER070	WAER090	WAER120	WAER155	WAER205	
Rated output torque T_{2N}		1	3	9	36	90	195	342	588	
			4	12	48	120	260	520	1040	
			5	15	60	150	325	650	1200	
			6	18	55	150	310	600	1100	
			7	19	50	140	300	550	1100	
			8	17	45	120	260	500	1000	
			10	14	40	100	230	450	900	
			12	18	55	150	310	600	1100	
			14	19	50	140	300	550	1100	
			20	14	40	100	230	450	900	
	Nm		2	15	15	60	150	325	650	1200
				25	15	60	150	325	650	1200
				30	20	55	150	310	600	1100
				35	19	50	140	300	550	1100
				40	17	45	120	260	500	1000
				45	14	40	100	230	450	900
				50	14	60	100	230	650	1200
				60	20	55	150	310	600	1100
				70	19	50	140	300	550	1100
				80	17	45	120	260	500	1000
Emergency stop torque T_{2NOT}	Nm	1,2	3~200	Triple rated output torque						
Rated input speed n_{1N}	rpm	1,2	3~200	5000	5000	4000	4000	3000	3000	
Maximum input speed n_{1B}	rpm	1,2	3~200	10000	10000	8000	8000	6000	6000	
Standard backlash P_2	arcmin	1	3~20	≤6	≤6	≤6	≤6	≤6	≤6	
		2	15~200	≤9	≤9	≤9	≤9	≤9	≤9	
Torsional rigidity	Nm/arcmin	1,2	3~200	3	7	14	25	50	145	
Allowable radial force F_{2a}	N	1,2	3~200	780	1530	3250	6700	9400	14500	
Allowable axial force F_{2a}	N	1,2	3~200	390	765	1625	3350	4700	7250	
Lifespan	hr	1,2	3~200	20000 *						
Efficiency	%	1	3~20	95%						
		2	25~200	92%						
Weight	kg	1	3~20	0.9	2.1	6.4	13	24.5	51	
		2	25~200	1.2	1.5	7.8	14.2	27.5	54	
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	≤61	≤63	≤65	≤68	≤70	≤72	

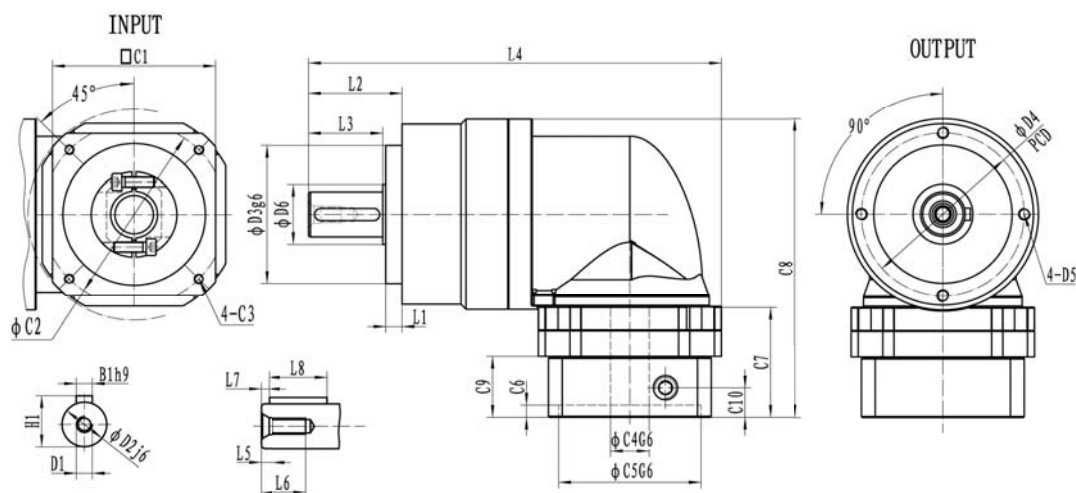
1. Ratio ($i=N_{in}/N_{out}$)

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	WAER050	WAER070	WAER090	WAER120	WAER155	WAER205
Rotational inertia J_1	kg.cm ²	1	3~10	0.09	0.35	2.25	6.84	23.4	68.9
			12、14	0.035	0.07	1.87	6.25	21.8	65.6
			20	0.03	0.07	1.87	6.25	21.8	65.6
		2	15	0.09	0.35	2.25	6.84	23.4	68.9
			25~100	0.09	0.09	0.35	2.25	6.84	23.4
			120~200	0.007	0.01	0.31	1.87	6.25	21.8

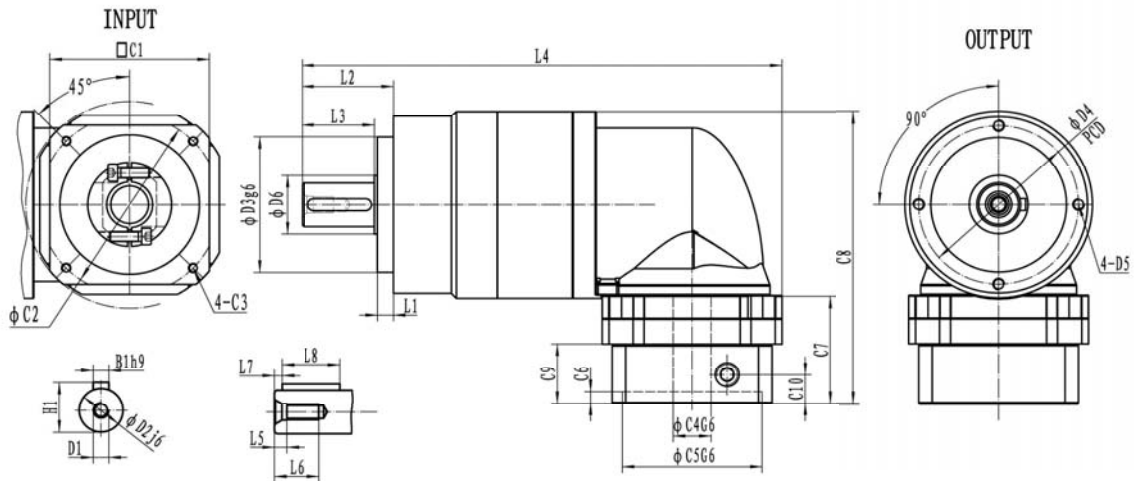


DIMENSION

SINGLE SECTION

- Dimension(single stage, Ratio $i=3\sim 200$)

Dimension	WAER050	WAER070	WAER090	WAER120	WAER155	WAER205
D1	-	M5	M8	M12	M16	-
D2,6	-	16	22	32	40	-
D3,6	-	52	68	90	120	-
D4	-	62	80	108	140	-
D5	-	M5	M6	M8	M10	-
D6	-	17.5	29.5	39.5	49.5	-
L1	-	6.5	8	17	15	-
L2	-	36	46	70	97	-
L3	-	28.5	36.5	51	79	-
L4	-	149.5	203	266.5	359	-
L5	-	4	6	10	16	-
L6	-	13	20	28	36	-
L7	-	3	3	5	5	-
L8	-	25.3	32	40	63	-
C1	-	60	80	130	180	-
C2	-	70	90	145	200	-
C3	-	M4	M5	M8	M12	-
C4 _{G6}	-	14	19	24	35	-
C5 _{G6}	-	50	70	110	114.3	-
C6	-	3.5	6	14	19	-
C7	-	35	54	81	81	-
C8	-	105	147	194.5	253	-
C9	-	24.2	29.5	45	57	-
C10	-	9.5	14.5	27	32	-
B1	-	5	6	10	12	-
H1	-	18	24.5	35	43	-



DIMENSION

DOUBLE SECTION

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

Dimension	WAER050	WAER070	WAER090	WAER120	WAER155	WAER205
D1	-	M5	M8	M12	M16	-
D2	-	16	22	32	40	-
D3	-	52	68	90	120	-
D4	-	62	80	108	140	-
D5	-	M5	M6	M8	M10	-
D6	-	17.5	29.5	39.5	49.5	-
L1	-	6.5	8	17	15	-
L2	-	36	46	70	97	-
L3	-	28.5	36.5	51	79	-
L4	-	181.5	240.5	290	431	-
L5	-	4	6	10	16	-
L6	-	13	20	18	36	-
L7	-	3	3	5	5	-
L8	-	25.3	32	40	63	-
C1	-	60	80	130	180	-
C2	-	70	90	145	200	-
C3	-	M4	M5	M8	M12	-
C4 _{G6}	-	14	19	24	35	-
C5 _{G6}	-	50	70	110	114.3	-
C6	-	3.5	6	11.5	19	-
C7	-	35	54	67	81	-
C8	-	105	147	178	253	-
C9	-	24.2	29.5	42.5	57	-
C10	-	9.5	14.5	27	32	-
B1	-	5	6	10	12	-
H1	-	18	24.5	35	43	-