

WAE Series planetary gearbox 系列行星减速机

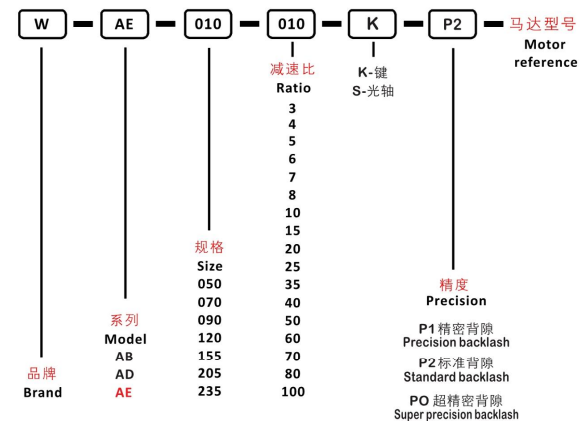
FEATURES 产品特点

- » 行星臂架与输出轴采用一体式结构设计，确保最大的扭转刚性。
- » 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
- » 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
- » 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
- » 输入端与马达轴连接采用双边抱紧方式，以获取最大的夹紧力和零背隙的动力传递。
- » Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- » Planetary wheel with full needle design, increase the contact area to improve the rigidity and output torque.
- » The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- » Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- » The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.



INDICATION FOR MODEL SELECTION

● 机种型号表示



GENERAL NOTICES

● 订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸
- 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

● 减速机性能资料/Performance

规格 Specification	单位 Unit	节数 Stage	减速比 Ratio	WAE050	WAE070	WAE090	WAE120	WAE155	WAE205	WAE235
额定输出转矩 Rated output torque T _{2N}	Nm	1	3	20	55	130	208	342	588	1140
			4	19	50	140	290	542	1050	1700
			5	22	60	160	330	650	1200	2000
			6	20	55	150	310	600	1100	1900
			7	19	50	140	300	550	1100	1800
			8	17	45	120	260	500	1000	1600
			10	14	40	100	230	450	900	1500
			15	20	55	130	208	342	588	1140
			20	19	50	140	290	542	1050	1700
			25	22	60	160	330	650	1200	2000
		2	30	20	55	150	310	600	1100	1900
			35	19	50	140	300	550	1100	1800
			40	17	45	120	260	500	1000	1600
			50	22	60	160	330	650	1200	2000
			60	20	55	150	310	600	1100	1900
2	70	19	50	140	300	550	1100	1800		
	80	17	45	120	260	500	1000	1600		
	100	14	40	100	230	450	900	1500		
急停扭矩/Emergency stop torque T _{2NOT}	Nm	1,2	3~100	三倍额定输出转矩/Triple rated output torque						
额定输入转速/Rated input speed Ω_{IN}	rpm	1,2	3~100	5000	5000	4000	4000	3000	3000	2000
最大输入转速/Maximum input speed Ω_{I18}	rpm	1,2	3~100	10000	10000	8000	8000	6000	6000	4000
超精密背隙/Super precision backlash P0	arcmin	1	3~10	-	≤2	≤2	≤2	≤2	≤2	≤2
		2	15~100	-	≤3	≤3	≤3	≤3	≤3	≤3
精密背隙/Precision backlash P1	arcmin	1	3~10	-	≤3	≤3	≤3	≤3	≤3	≤3
		2	15~100	-	≤5	≤5	≤5	≤5	≤5	≤5
标准背隙/Standard backlash P2	arcmin	1	3~10	≤12	≤5	≤5	≤5	≤5	≤5	≤5
		2	15~100	≤16	≤8	≤8	≤8	≤8	≤8	≤8
扭转刚性/Torsional rigidity	Nm/arcmin	1,2	3~100	3	7	14	25	50	145	225
容许径向力/Allowable radial force F _{2a}	N	1,2	3~100	780	1530	3250	6700	9400	14500	50000
容许轴向力/Allowable axial force F _{2a}	N	1,2	3~100	390	765	1625	3350	4700	7250	25000
使用寿命/Lifespan	hr	1,2	3~100	20000						
效率/Efficiency	%	1	3~10	≥97%						
		2	15~100	≥94%						
重量/Weight	kg	1	3~10	0.6	1.2	3.7	7.5	16	36	53
		2	15~100	0.7	1.6	4.2	10.7	17	37	54
使用温度/Working temperature	°C	1,2	3~100	-10°C~90°C						
润滑/Lubricating		1,2	3~100	合成润滑油脂/Synthetic lubricating grease						
防护等级/IP Grade		1,2	3~100	IP65						
安装方向/Installation direction		1,2	3~100	任意方向/In any direction						
噪音值(n1=3000rpm,无负载) Noise level (n1=3000rpm,off load)	dB(A)	1,2	3~100	≤56	≤58	≤60	≤63	≤65	≤67	≤70

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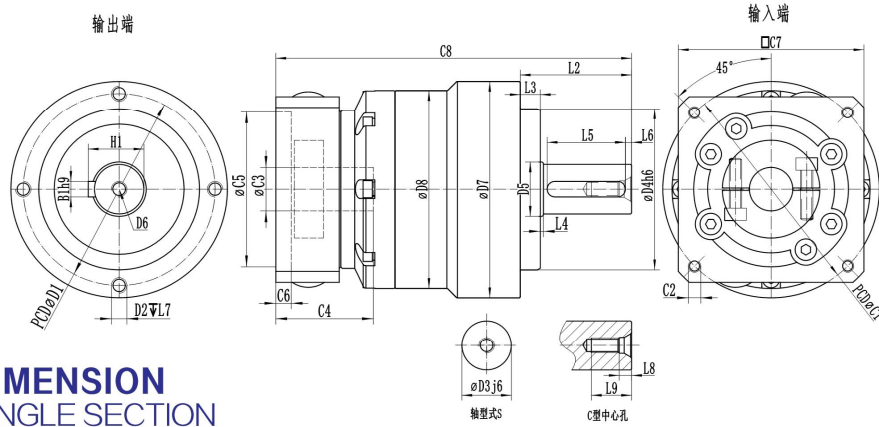
● 减速机转动惯量

规格 Specification	单位 Unit	节数 Stage	减速比 Ratio	WAE050	WAE070	WAE090	WAE120	WAE155	WAE205	WAE235
转动惯量J1 Rotational inertia J1	kg·cm ²	1	3	0.03	0.16	0.61	3.25	9.21	28.98	69.61
			4	0.03	0.14	0.48	2.74	7.54	23.67	54.37
			5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
			6	0.03	0.13	0.45	2.65	7.25	22.75	51.72
			7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
			8	0.03	0.13	0.44	2.58	7.07	22.59	50.84
			10	0.03	0.13	0.44	2.57	7.03	22.51	50.56
			15	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			20	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			25	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		30	0.03	0.03	0.13	0.47	2.71	7.42	23.29	
		35	0.03	0.03	0.13	0.47	2.71	7.42	23.29	
		2	40	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			50	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			60	0.03	0.03	0.13	0.44	2.57	7.03	22.51
70	0.03		0.03	0.13	0.44	2.57	7.03	22.51		
80	0.03		0.03	0.13	0.44	2.57	7.03	22.51		
100	0.03	0.03	0.13	0.44	2.57	7.03	22.51			

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

2. 最大加速转矩 T_{2B} = 60% of T_{2NOT}
2. Maximum acceleration torque T_{2B} = 60% of T_{2NOT}

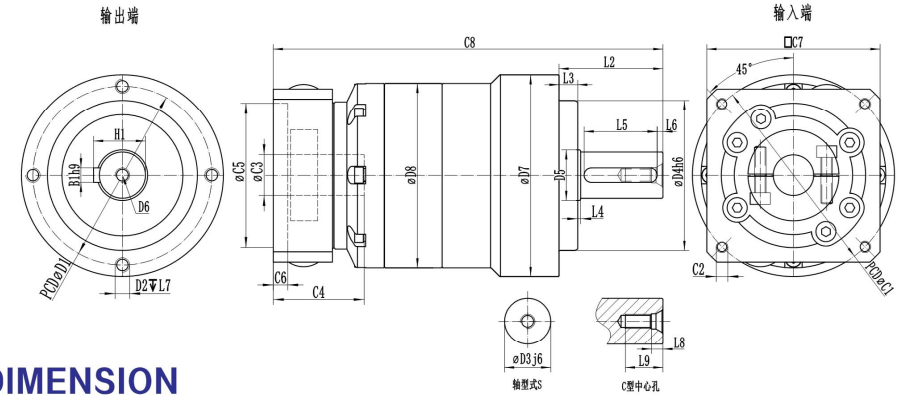
3. 输出转速 100rpm, 作用于输出轴中心位置
3. Output speed 100rpm, acting on the center of the output shaft



DIMENSION
SINGLE SECTION

- 尺寸 (单节, 减速比 $i=3\sim 10$)
Dimension(single stage, Ratio $i=3\sim 10$)

尺寸/Dimension	WAE050	WAE070	WAE090	WAE120	WAE155	WAE205	WAE235
D1	44	62	80	108	140	184	210
D2	M4*0.7P	M5*0.8P	M6*1.0P	M8*1.25P	M10*1.5P	M12*1.75P	M16*2.0P
D3 j6	12	16	22	32	40	55	75
D4 g6	35	52	68	90	120	160	180
D5	15	18	30	40	50	70	85
D6	M4*0.7P	M5*0.8P	M8*1.25P	M12*1.75P	M16*2.0P	M20*2.5P	M20*2.5P
D7	50	70	90	120	155	205	235
D8	53	64	94	125	150	200	225
L1	-	-	-	-	-	-	-
L2	24.5	36	46	70	97	100	126
L3	4	6.5	8	17	15	15	18
L4	1	1	1	1.5	3	3	3
L5	14	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	10	10	12	16	20	22	28
L8	3.2	4.8	7.2	10	12	15	15
L9	10	12.5	19	28	36	42	42
C1	46	70	90	145	145	200	235
C2	M4*0.7P	M4	M5	M5	M8	M8	M12
C3	≤8	≤14	≤19	≤24	≤24	≤35	≤35/≤42
C4	26	31.5	41	41	59	60	81
C5	30	50	70	70	110	110	114.3
C6	5	5	5	6	14	14	19
C7	42	60	80	80	130	130	180
C8	86	115	128	145	163	199.5	221.5
B1 h9	4	5	6	10	12	16	20
H1	13.5	18	24.5	35	43	59	79.5



DIMENSION
DOUBLE SECTION

- 尺寸 (双节, 减速比 $i=15\sim 100$)
Dimension(double stage, Ratio $i=15\sim 100$)

尺寸/Dimension	WAE050	WAE070	WAE090	WAE120	WAE155	WAE205	WAE235
D1	44	62	80	108	140	184	210
D2	M4*0.7P	M5*0.8P	M6*1.0P	M8*1.25P	M10*1.5P	M12*1.75P	M16*2.0P
D3 j6	12	16	22	32	40	55	75
D4 g6	35	52	68	90	120	160	180
D5	15	18	30	40	50	70	85
D6	M4*0.7P	M5*0.8P	M8*1.25P	M12*1.75P	M16*2.0P	M20*2.5P	M20*2.5P
D7	50	70	90	120	155	205	235
D8	53	64	94	125	150	200	225
L1	-	-	-	-	-	-	-
L2	24.5	36	46	70	97	100	126
L3	4	6.5	8	17	15	15	18
L4	1	1	1	1.5	3	3	3
L5	14	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	10	10	12	16	20	22	28
L8	3.2	4.8	7.2	10	12	15	15
L9	10	12.5	19	28	36	42	42
C1	46	70	90	145	145	200	235
C2	M4*0.7P	M4	M5	M4	M5	M8	M8
C3	≤8	≤14	≤19	≤24	≤19	≤24	≤24/≤28
C4	26	31.5	41	31.5	41	59	41
C5	30	50	70	50	70	110	70
C6	5	5	5	5	6	14	6
C7	42	60	80	60	80	130	80
C8	107	141.5	154.5	162.5	179	197	214
B1 h9	4	5	6	10	12	16	20
H1	13.5	18	24.5	35	43	59	79.5